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COMPUTERWORLD

Headaches greet users moving to client/server

Lack of tools undercuts promise of downsizing

BY SALLY CUSACK
and PATRICIA KEEFE
CW STAFF

When it comes to embracing the world of client/server architecture, especially when mission-critical applications are involved, the advice around most firms is still "Proceed with caution."

The allure of client/server computing lies in the promise of giving companies and users greater access to corporate data at a lower cost than what conventional terminal-to-host systems can offer.

However, reality today is characterized by a lack of client/server-oriented communications, diagnostic and applications development tools — the types of tools that are readily available on mainframes.

"Today, if a user has a big, mainframe-based application and wants to move to client/server, they are in for big headaches," said Stuart D. Woodring, director of software strategy research at Forrester Research, Inc. in Cambridge, Mass. The necessary tools to manage downsized applications are lagging behind the applications.

Of vital interest to the downsizers is an inability to centrally control client/server networks linked to one another and to larger host machines. The tools used locally on local-area networks to diagnose, correct and troubleshoot problems cannot be used

Continued on page 91

Buyout maps CA's direction

BY NELL MARGOLIS
and ELLIS BOOKER
CW STAFF

GARDEN CITY, N.Y. — Computer Associates International, Inc. said last week that its pending acquisition of Pansophic Systems, Inc. signals a shift in CA's strategy away from offering disparate product lines and toward the unified customer approach previously outlined as CA '90s.

"From the customer's perspective, there will be no decrease in support and services," said Senior Vice President Sanjay Kumar.

Late Friday, CA postponed until this week a board meeting that was to consider the Pansophic deal, maintaining that the sale is going forward.

Kumar promised a panoply of user benefits from the pending deal, including support for any overlapping product lines and connection of Pansophic's IBM Application System/400-based manufacturing offerings with CA's mainframe software.

But technology analysts found little synergy in CA's multifaceted products suite, including those CA would inherit from the pending acquisitions of Pansophic and, last month, On-Line Software International, Inc.

Continued on page 92

David Eskra
Vice chairman, CEO

Next in line

The acquisition of Pansophic Systems would give Computer Associates a catalog of Application System/400 applications and mainframe development and data access tools

Founded: 1968.

Revenue fiscal 1990: $230 million.

Work force: About 1,600.

Two operating divisions: Applications software and systems software.

Applications software: Pansophic Resource Management System, AS/400-based software for manufacturing, distribution and financial operations.

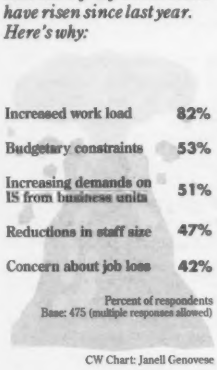
Systems software: Three product lines: The Telon CASE product line; application control products including Panvalet, a leader of mainframe library management systems; and Easytrieve and Easytrieve Plus information retrieval products.

Source: Pansophic Systems

CW Chart: Janell Genovese

More work, more stress in IS jobs

Fifty-seven percent of those polled in Computerworld*'s fifth annual job satisfaction survey say stress levels have risen since last year. Here's why:*



CW Chart: Janell Genovese

Survey results, page 64.

Obsolete methods earn FDA a lemon

BY MITCH BETTS
CW STAFF

WASHINGTON, D.C. — The good news is that inspectors at the U.S. Food and Drug Administration are on the job trying to protect consumers from imported food that is spoiled or contaminated. They reject 40% of the imported food they inspect.

The bad news is that the FDA inspects only 2% of all imported food.

That is just one symptom of a federal agency that many experts believe is stretched way too thin and needs a complete overhaul, right down to its information systems. The FDA must re-engineer its collection of isolated computer systems so it can do a more efficient job of regulating industry and managing the limited resources it has, according to recent studies and congressional testimony.

Falling short

The Food and Drug Administration has been described as an example of hollow government

hol•low gov•ern•ment – Chronic underfunding of government agencies that erodes their capacity to perform their basic functions. Deficiencies include understaffing, too few specialists, inadequate working conditions (such as dilapidated facilities and obsolete equipment) and weak information systems.

Sources: U.S. Senate Committee on Governmental Affairs; Walter Williams, the University of Washington

CW Chart: Michael Siggins

The FDA's information systems are "for the most part . . . unlinked and obsolete," testified Mark Novitch, a former FDA official who is now vice chairman of The Upjohn Co. in Kalamazoo, Mich. "Electronic communications between the FDA and the industries it regulates are virtually nonexistent," he added.

In sum, the FDA is chronically underfunded, understaffed and a prime example of "hollow government," according to Sen. John Glenn (D-Ohio), chairman of the Senate Committee on Governmental Affairs.

After a yearlong study of the FDA's problems, a 15-member

Continued on page 93

New Unix gets cool reception

BY J. A. SAVAGE
CW STAFF

SAN JOSE, Calif. — In a market littered with user-rejected "next generation" operating systems, Sunsoft, Inc. last week unveiled Solaris, a shrink-wrapped version of Unix targeted at commercial desktop customers.

Brushing aside criticism that the move will further confuse Unix users, Sunsoft, a subsidiary of Sun Microsystems, Inc., said Solaris will operate on Sun's Scalable Processor Architecture systems and computers based on Intel Corp.'s high-end CPUs.

Although Sunsoft bolstered its announcement with support from more than 50 hardware and software vendors, initial reaction was cool. Users with large DOS systems were indifferent, DOS-based desktop hardware and software vendors were hesitant and analysts were blase.

"What are people waiting for? They're waiting for a true multiprocessing distributed system," said Craig Sultan, an analyst at Montgomery Securities in San Francisco. Sultan said neither Solaris nor the operating system plans of the Advanced Computing Environment consortium are the answer, but they do represent a step closer to fulfilling customer needs.

Users have some time to figure out which, if any, direction they will take in multiplatform operating systems. Neither ACE

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INSIDE

To make outsourcing work in these tough times, users must ensure that it is structured correctly with a careful eye on the vendor's capabilities. Page 67.

Mellon Bank turned to the business world to hire Keith P. Russell as its top IS executive. Page 4.

Intel to extend networking offerings. Page 92.

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6 The 80386SX notebook market is a hotbed of price cuts and new models.

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Quotable

"You can do almost anything. It's a matter of how much you want to create yourself."

FRANK MICHNOFF
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On the dearth of client/server tools. See story page 1.

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The 5th Wave

"IT STARTED OUT AS A KIT, AND WHILE I WAS WAITING FOR PARTS, THEY MERGED WITH A VACUUM CLEANER COMPANY."

EXECUTIVE BRIEFING

■ **Computer Associates' early September promise of more acquisitions** quickly came true: The company announced plans last week to pick up Pansophic Systems. This move came on the heels of an announced merger with On-Line Software. The pending acquisition of Pansophic will help illustrate CA's plans to provide a unified product line instead of a collection of software, the firm said. However, analysts said they were not sure whether Pansophic and CA product lines have much synergy. **Page 1.**

■ **Stress levels felt by those working in the information systems field are on the rise.** Still, most IS workers say they are not working to their personal potential and that the talent in their IS departments is not being fully exploited. Those findings and more are reported in *Computerworld*'s fifth annual job satisfaction survey. **Page 64.**

■ **Mellon Bank names a banker with no IS experience to its top IS position.** Keith P. Russell, the former president of Glendale Federal Bank in Glendale, Calif., will take over for the well-known George DiNardo, who left Mellon in January. **Page 4.**

■ **The information systems used by the U.S. Food and Drug Administration** are for the most part obsolete, according to testimony delivered at a recent Senate hearing. That shortfall is hampering the agency's ability to inspect imported food, according to the report. **Page 1.**

■ **Oracle customers report big improvements** in the company's suite of financial applications, which were bug-ridden when they were shipped last year. On-site support has been cited as a plus. **Page 25.**

■ **Whether they travel to assignments via plane,** houseboat or trailer or stay within a two-hour commuting radius of their homes, contractors are both a transient and a permanent part of the IS landscape. **Page 77.**

■ **Bull provides Unix extensions** to its proprietary operating system, and customers are upbeat about this open systems direction. **Page 25.**

■ **Users are taking a long, hard look at the client/server concept** before embracing it. Analysts say that's the smart way to go because of the lack of client/server-based tools on the market today. **Page 1.**

■ **Before IS professionals get involved in sticky battles with vendors,** they can learn the fine art of conflict resolution by practicing three problem-solving techniques: negotiation, mediation and arbitration. **Page 86.**

■ **The failed Soviet coup puts a spotlight** on inadequate communications links to the U.S. and may encourage some much-needed improvements. **Page 47.**

■ **Dicey economic times are leading many companies to consider outsourcing.** Following these three steps can make the decision-making process a painless one: Segment technology activities into outsourceable pieces, analyze which of those segments it makes business sense to farm out, and use the procurement process as a test of your working relationship with the vendor. **Page 67.**

■ **Knowledgeware reshuffles its executive lineup** as Terry McGowan resigns and Don Addington takes over as company president. **Page 10.**

■ **On site this week:** Metropolitan Life rights the wrongs of its executive information system by meeting with end users and tailoring the system to their specific needs. **Page 29.** Pacific Gas & Electric is ahead of schedule with its plan to move 20,000 PCs to a graphical user interface-oriented groupware environment. **Page 33.** Comcast uses an imaging system to keep its business going. A fire drove the company from its headquarters. **Page 37.**

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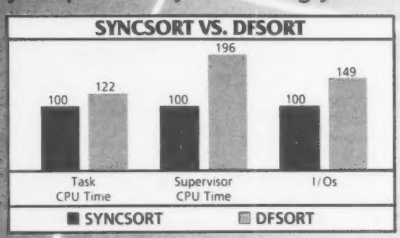

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Career banker named to head Mellon IS

BY CLINTON WILDER
CW STAFF

PITTSBURGH — In a sign of the times in banking and other industries, Mellon Bank Corp. last week named a career banker with no direct information systems background to head its IS department and two business units.

Keith P. Russell, former president and chief operating officer at Glendale Federal Bank in Glendale, Calif., took over the IS post vacated in January by George DiNardo, an executive with one of the most solid technology reputations in the IS profession.

Russell was named executive vice president in charge of information management and research — DiNardo's former domain — with additional responsibility for technology products and mortgage banking.

"It's a 180-degree turn for Mellon," said M. Victor Januleitis, president of Los Angeles-based IS consultancy Positive Support Review, Inc. "But Russell is much more the prototype of what the IS executive will look like in the future, with more background on the business side."

Following an extensive search for DiNardo's replacement, Mellon Chairman Frank V. Cahouet tapped someone he knew. Before joining Glendale Federal in 1985, Russell had been Cahouet's second-in-command at Security Pacific Corp.'s subsidiary group in Los Angeles.

Russell picks up the IS reins at Mellon Bank

Russell "was always a very sharp guy, but I've never seen him in this role," said retired Merrill Lynch & Co. IS Chief DuWayne Peterson, who headed Security Pacific Automation Corp. when Russell worked on the bank side there.

"Most financial firms now realize that IS is a key part of their organization and are choosing businessmen to run them. A lot of the MIS guys don't get these jobs, and they probably don't deserve them," he added.

Peterson compared Mellon's move with Merrill Lynch's replacing him with Edward Goldberg, a career-long operations and administration manager at the financial giant. "Cahouet is looking for a solid guy to make sure that everything is being done cost-effectively and not just for the sake of technology," Peterson said.

Russell, 45, said he plans no immediate changes in IS and credited DiNardo and Mellon with "an excellent job building up the technology resources." He said Mellon will continue to try to grow its large business offering IS services to other banks.

Mellon's IS management team has remained relatively intact since DiNardo departed, with No. 2 IS executive David A. Moore still in place.

Smallest AS/400 offers money-back guarantee

BY MARYFRAN JOHNSON
CW STAFF

NEW YORK — IBM's newest Application System/400 cast a safety net under small business customers last week with its Plug 'N' Go preloaded application software and 90-day, money-back guarantee.

"This may be the first ever: an IBM product with 100% satisfaction guaranteed," said Robert LaBant, IBM vice president and general manager of the application systems business unit in charge of the AS/400s.

Available Sept. 20 with prices starting at $12,000, the D2 is also intended to catch the eye of larger companies looking to distribute computing power in remote locations needing more than a personal computer. Prices for D2s bundled with the Plug 'N' Go applications start at $18,000.

In line with corporate interests, IBM said that by next year, it will extend AS/400 cooperative processing capabilities to include support for the mainframe-based CICS.

With the AS/400's top-end Model D80 already running mainframe-size applications and tasks, LaBant said, some customers are clamoring for the ability to run CICS applications on an AS/400.

Joining the queue

At ABC Home Health Services, Inc. in Brunswick, Ga., a number of D2s have already joined a rollout of low-end AS/400s at the company's remote offices.

The largest privately held home health care agency in the U.S., ABC is planning to put up to 135 small AS/400s in field offices with no technical personnel.

"These D2s gave me an expanded capability, a little faster processing and more capacity," said Don O'Connor, ABC's business analyst.

This smallest AS/400 might break new ground in distribution channels as well.

"I would be happy to sell them in retail channels," LaBant said last week. "Can the D2 be marketed through dealers? I've asked our marketing organization about that. We'll see what they decide."

The return guarantee on the Plug 'N' Go systems is designed for small businesses and limited to one per customer.

"This 90-day-return guarantee is a real no-risk proposition for small to medium-size business customers," said Tom Willmott, an analyst at Aberdeen Group in Boston. "IBM is clearly marketing to the guy who doesn't want to take risks with computer science."

The Plug 'N' Go program has two offerings: 17 separate Plug 'N' Go Applications that can be installed on D2s at the customer site and a dozen Plug 'N' Go System Solutions, which are preloaded at the factory with certain application packages.

Slated to be available in October, the applications cover everything from mortgage loan processing, courthouse records processing and merchandising to spreadsheets and construction site management.

A step up

With its Application System/400 D2, IBM claims an 18% performance boost at a 34% lower cost

	AS/400 Model C4	AS/400 Model D2
Performance rating*	1.1 RAMP-C	1.3 RAMP-C
Main memory	8M-12M bytes	8M-16M bytes
Disk storage	640M-960M bytes	800M-1.2G bytes
Number of workstations supported	Up to 14	Up to 14
Price	$18,250 (including OS/400 operating system)	$12,000

*Relative system performance under IBM's RAMP-C benchmark

CW Chart: Michael Siggins

Tandem bug's world tour thwarted

BY JEAN S. BOZMAN
CW STAFF

CUPERTINO, Calif. — It was the software bug felt 'round the world.

As the earth turned on Aug. 27, a unique combination of numbers generated by Tandem Computers, Inc.'s "time stamp" facility threatened to stop hundreds of Tandem's fault-tolerant computers at precisely 4:22 p.m. in each local time zone.

Starting in Asia and continuing on to Europe, the appointed hour of doom arrived, precipitating system shutdowns.

The culprit was a faulty piece of software code embedded in the Tandem Safeguard security system that interpreted the date and time numbers as an impossible command. Affected systems tumbled into an endless loop that tied up all computer resources and eluded attempts to fix the problem.

"The time stamp took on a numerical value that would trigger incorrect computer logic," one West Coast Tandem user explained. "The security package would then lock up the system. It wouldn't permit anyone to log on, even people who were trying to fix the problem." The only way to fix the problem, once it began, was to take the affected computers off-line before restarting them.

Shutdowns were only prevented by disabling the security system between 4:22 p.m. on Aug. 27 and 5 p.m. on Aug. 28.

This harrowing brush with worldwide hardware failures was averted at most U.S. sites after Tandem field engineers warned users in last-minute phone calls.

Only 60 sites worldwide felt the sting of the bug's bite, said a Tandem spokesman, who asserted that Tandem's fault-tolerant design came through after all, retaining data on affected machines.

The computers that felt the bug were Tandem VLX and Tandem Cyclone systems running the new C 20.2 release of the Safeguard security package, along with Tandem's Guardian operating system.

If a permanent software fix is not made, the same problem will recur in 18 months, according to sources.

Some sources also said they expected Tandem to announce a fix later this fall.

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Vendors storm 386SX market

386SX-based notebooks come out with lower prices, advanced features

BY MICHAEL FITZGERALD
CW STAFF

The Intel Corp. 80386SX-based notebook train is adding coal to its fires via price cuts and new introductions, just in time for the fall selling season. The price-cutting may be an attempt to make room for new, more expensive machines in a market in which supply is meeting demand.

"The 80386SX market has become a virtual commodity market," said Leslie Fiering, personal computer analyst at Gartner Group, Inc. in Stamford, Conn. She predicted that price cuts will continue and that vendors will offer products with advanced communications, less weight and other features to stand out in a field of "me-too" products.

Joining the fray

The most recent moves come from several companies: Toshiba America Information Systems, Inc.; Dell Computer Corp.; Safari Systems; the AT&T/Marubeni Corp. joint venture; and Librex Computer Systems, Inc., a subsidiary of Japan's Nippon Steel Corp.

Toshiba plans to introduce its T2200SX notebook today. The T2200SX weighs 5½ pounds and has standard-size keys and a 60M-byte hard drive. Toshiba also has a 9½-in. IBM Video Graphics Array (VGA)-compatible screen, 2M bytes of random-access memory in flash-memory card format, a nickel-hydride battery with a three-hour life and a 40M-byte hard drive option. Pricing on the products, available now, is $4,499 for the 40M-byte hard drive version and $4,799 for the 60M-byte version.

Toshiba's 2200SX *notebook fits into a docking station*

Dell last week brought out the 320N+, a 6.4-pound notebook with 4M bytes of RAM, a 60M-byte hard drive, a VGA-compatible screen and a nickel-metal hydride battery for $3,499. AST Research, Inc. announced its Premium Exec 386SX/25 [CW, Sept. 2].

Some analysts said Toshiba's pricing will hurt the company.

"I don't understand what Toshiba is trying to do at all. I can't see where their strategy can lead to anything but market share losses," said Eric Zimits, an analyst at Dallas-based Rauscher Pierce Refsnes & Co.

Fiering disagreed, saying Toshiba "has the resources and technology to play wherever they want to play in the portable market."

Price-cutters include Dell and Librex, both of which cut at least 30% from prices on their existing portables. Dell's 320N base model now costs $2,499, while Librex's lowest priced SX notebook will cost $2,999.

AT&T cut 13.6% from its Safari NSX/20's price, which now sells for $4,749, and said it will ship a Safari with an 85M-byte hard drive (for $5,749) Oct. 1, making it among the first to market.

Analysts said Librex will offer several new products at Comdex/Fall '91 that will set it apart, and perhaps boost its minimal market presence.

Wait-and-see attitude

Some users, at least, are waiting for the SX picture to clear before they buy.

"The market is developing so rapidly we'll just wait and see," said Gene Wheeler, office technology programmer at Timken Co. in Canton, Ohio. Wheeler said the company had basically "decided not to decide" on a box because of perceived problems with hardware compatibility and other issues, and he joked that with recent price cuts, "what we're waiting for is something free."

A handful of other users contacted said they had purchased notebooks or laptops based on Intel's 80286 chips because of market flux and lack of shipping products in the SX marketplace.

Despite user concerns, analysts said the SX market is just now hitting its stride.

Computer Intelligence/Infocorp's most recent numbers for retail sales show SX notebook sales making up close to 30% of the overall portables market in June, when many vendors had yet to ship notebooks in volume and before a significant round of price cuts, led by Compaq Computer Corp., took effect.

"By next year, I would expect the 386SX to be well in the lead as the dominant notebook processor," Infocorp analyst Peter Teige said.

Plastic wrap 101

Advanced Micro Devices, Inc. is shrink-wrapping its AM386DX and -DXL chips, but neither line will appear next to software on retail shelves. The result, however, could be a 10% to 15% drop in the price of laptops next year.

AMD has shrunk both the 25- and 33-MHz versions of its DX and DXL semiconductors and wrapped them in a plastic, rather than conventional ceramic, package. The repackaged chips, known as Flat Packs, take up 40% less space on the motherboard than their ceramic brethren, AMD said.

The low-power DX and DXL chips were introduced in March and are aimed at the portable computer market. An AMD spokesman said a 40-MHz version of the Flat Pack chip is in beta testing.

JIM NASH

New Unix

FROM PAGE 1

nor Solaris is scheduled for delivery until the middle of next year.

Compared with the 5-month-old ACE consortium, which has at least two vendors offering different versions of the operating system, Sunsoft's Solaris is relatively straightforward.

Sunsoft claimed that its current 3,600 applications will run immediately on Solaris' release. The 70-member ACE consortium promises operating systems from Microsoft Corp. and The Santa Cruz Operation that will run identical applications on both Intel-based machines and computers using Mips Computer Systems, Inc. CPUs. But software vendors must port their applications to ACE.

ACE in the hole

Sun Microsystems' Sunsoft group is pitching its new operating system against the ACE consortium

Solaris was designed for both Sun workstations and high-end Intel-based systems. It will be delivered in a shrink-wrapped box the size of an urban telephone book. In that box will be the software on compact disc and paper documentation.

Solaris comes with 15 applications including calendar manager, network file manager and multimedia mail.

A two-user license is priced from $795 for hardware under $5,000 to $1,495 for hardware over $10,000.

CW Chart: Janell Genovese

However, that will not necessarily entice users. Bruce Scott, vice president of development at Gupta Technologies, Inc. in Menlo Park, Calif., wants to ignore the whole multiplatform operating system environment. He said he is quite happy with two separate operating systems — DOS and Unix — each of which has thousands of Unix applications available.

"We don't have any problems moving data files, etc., between our DOS-based computers and our Sun workstations. Why would we want to use a new operating system?" he said.

Despite the thousands of Unix applications that will be able to run on Solaris when it is issued, most users want to maintain their personal computer applications. But under Solaris, they would have to use a PC emulator, according to Bill Coleman, vice president of systems software at Sunsoft. At least one user in that situation, Dave Bennett, director of information systems at Dunkin' Donuts of America, Inc., said he finds Sun's DOS emulator unsatisfactory.

A few PC applications, such as Lotus Development Corp.'s 1-2-3 spreadsheet, will be initially available on Solaris. But a spokeswoman for Lotus, whose spreadsheet already runs on Sun computers, said there were no plans to port other applications to the new operating system.

Sunsoft and Novell, Inc. announced an agreement whereby Novell will push Solaris through its distribution channels. Novell will also work to incorporate networking features into Solaris.

Borland International, Inc. will have Dbase IV on Solaris, provided Borland's proposed merger with Dbase owner Ashton-Tate Corp. goes through. That product is already ported to Unix. "We are very dedicated to DOS and Windows," a Borland spokesman said.

Although Intel's and Novell's support of Solaris was a boon to its introduction, both firms are hedging their bets with involvement in the ACE consortium.

PC companies that may resell the operating system include AST Research, Inc., Compuadd Corp. and Dell Computer Corp.

Correspondent Jim Nash contributed to this story.

Peregrine hoping to fly with client/server

BY ELISABETH HORWITT
CW STAFF

CARLSBAD, Calif. — Mainframe-based enterprise management software vendor Peregrine Systems, Inc. plans to jump on the client/server bandwagon at its user meeting next month in San Diego, a company spokesman told *Computerworld* last week.

The company's Peregrine Network Management System applications, which currently run on IBM mainframes and Unix hosts, are being used by 40% of the global Fortune 50 companies, according to Peregrine's chief technology officer, Chris Cole.

One major application manages trouble tickets that keep track of a network problem's progress toward resolution. Other applications include problem, change and inventory management for both systems and networks, Cole said.

The client/server-based system will set up a cooperative processing relationship between workstations that will run the applications and a large, centralized Unix or IBM MVS system that will act as a data repository for the entire organization, Cole said.

The client/server approach will enable users to execute applications more easily and interactively, while also saving mainframe resources, he added.

WRITTEN IN C, the product's server component will run on any Unix hardware.

Written in C, the product's server component will run on any Unix hardware, a Peregrine spokeswoman said.

Client systems supported will include MVS, IBM 3270 terminals, Unix, OS/2, Microsoft Corp.'s Windows 3.0 and Apple Computer, Inc. Macintoshes, the spokeswoman said.

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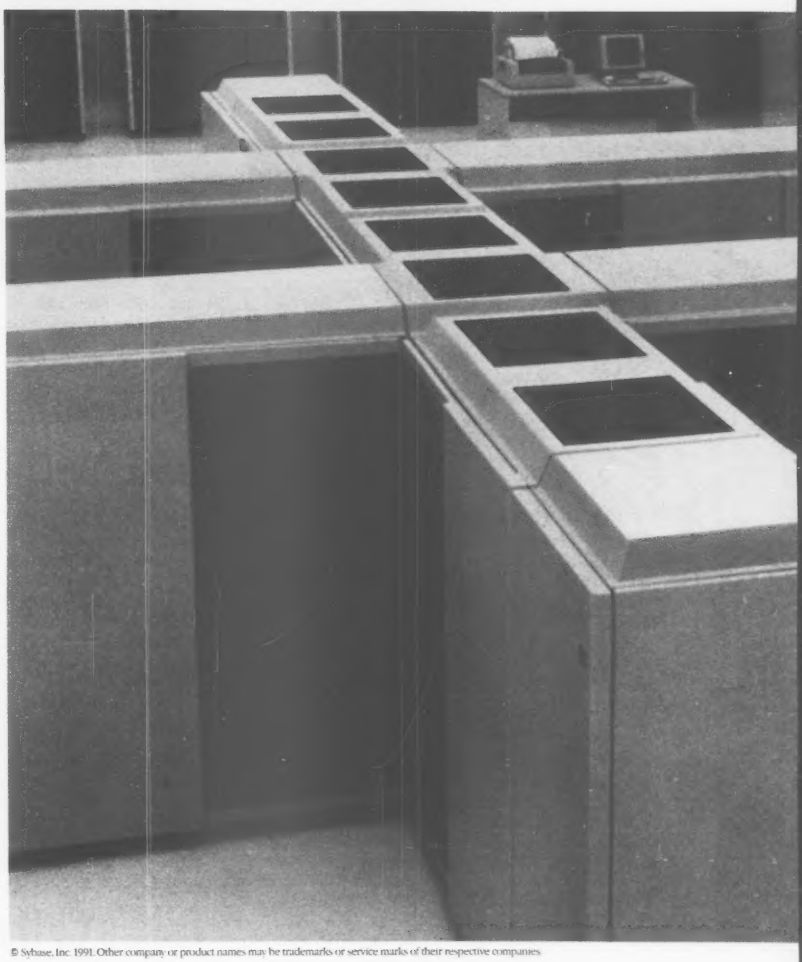

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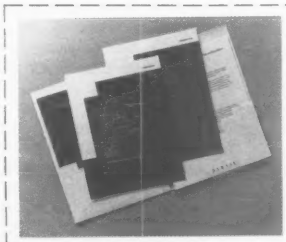

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NEWS SHORTS

Proteon adds Phase IV support

Proteon, Inc. said it has implemented Digital Equipment Corp. specifications on its products to allow computers on Token Ring networks to interoperate across Decnet Phase IV networks. The cooperative effort is aimed at allowing Proteon's internetworking routers to interconnect Token Rings and Decnet Ethernets.

Powerhouse gains AS/400 support

Cognos, Inc. has unveiled new versions of its Powerhouse 4GL for IBM's Application System/400 and Hewlett-Packard Co.'s Apollo 9000 Series 700 and 800 computers. The AS/400 port reportedly provides a 100% performance increase in on-line transaction processing and tighter integration with the OS/400 operating system and database.

Microsoft's tech group gets director

Microsoft Corp. has named Richard Rashid director of its 2-month-old advanced technology research group. Rashid, 39, had most recently been director of the Mach operating system project at Carnegie Mellon University in Pittsburgh.

Xerox opens up Globalview

Xerox Corp. has unbundled its year-old Globalview work group and document management software applications from its proprietary line of Xerox workstations. The client software will run on Sun Microsystems, Inc. Scalable Processor Architecture-based Unix platforms ($2,000 per unit) and IBM-compatible computers ($7,500 per unit) under OS/2. The server software runs on DEC VAXs. The Xerox Docuteam work-group software costs $20,000 for 10 desktops.

IBM ships hard drive innovation

IBM's Rochester, Minn., division is readying a 1G-byte, 3½-in. disk drive with a magneto-resistive recording head and a new IBM technology called the Nanoslider. The Nanoslider, the manufacturing base for the heads, is one-sixth the size of current slider technology. IBM said this technology will spur smaller, cheaper drives with higher capacity, higher performance levels and shorter development cycles. The drive will cost $1,470 or $1,335 for an 865M-byte version.

BDPA calls for Section 1706 repeal

The Black Data Processing Associates (BDPA) has issued a resolution calling for the repeal of Section 1706 of the Tax Reform Act of 1986. The controversial provision applies a 20-question test to determine whether programmers provided by technical service firms are classified as employees or independent contractors [CW, March 25]. BDPA said Section 1706 has proved unworkable and "harmful to minority- and female-owned small businesses" in the technical services industry.

FTC cites ADP for 'misleading'

The Federal Trade Commission has attacked Automatic Data Processing, Inc. (ADP) in Roseland, N.J., for providing car dealers with software that reportedly misleads consumers into thinking it is cheaper to buy a car through financing than by paying cash. A proposed consent agreement, which will settle the charges, requires ADP to remove the offending "cash comparison" feature from its dealer software and to inform dealers that they should stop using the deceptive computer printouts in their financing pitch.

Platinum series goes European

IBM unveiled Version 2.1 of its Platinum series, a family of accounting and MIS software featuring a Foreign Currency Manager module said to allow users who deal with non-U.S. currency to convert, enter, report and print in user-defined currencies based on user-entered exchange rates. Foreign Currency Manager's is list priced is $2,495.

Hub rivals in FDDI shoot-out

BY JOANIE M. WEXLER
CW STAFF

The Hatfields and McCoys were at it again last week in the smart-hub arena. Archrivals Synoptics Communications, Inc. and Cabletron Systems, Inc. each unveiled plans for adding Fiber Distributed Data Interface (FDDI) local-area networks to the Ethernet and Token Ring support in their wiring centers.

The moves mean that customers will be able to internetwork and centrally manage all three network types through one piece of equipment.

In this round of one-upmanship, Santa Clara, Calif.-based Synoptics gained the edge with a bigger commitment and a more detailed plan for supporting 100M bit/sec. LANs than its Rochester, N.H.-based rival. Synoptics plans to ship modules for 100M bit/sec. LANs running over both fiber and shielded twisted-pair wire in October.

Cabletron's FDDI module is slated to ship in first-quarter 1992 and will be an extension of the firm's existing Ethernet-to-FDDI bridge module. The company will not support 100M bit/sec. over copper until second-quarter 1992 and will resell Network Peripherals, Inc. FDDI adapter cards until its home-grown cards are available at that time, Cabletron said.

The two vendors' promises to embrace 100M bit/sec. LAN technology in their hot-selling wiring centers serve more to satisfy customer checklists than to address immediate bandwidth needs because the price is still high, said Charlie Robbins, director of communications research at Aberdeen Group.

Synoptics has priced its FDDI modules from $1,700 to $2,250 per hub port connection. Cabletron said it is committed to getting the per-port connection down to below $1,000 by the time it ships.

Although they may not be using it right away, "customers like to know the greater bandwidth will be available when they make a hub procurement," Robbins said.

Such was the case at Children's Hospital in Pittsburgh, which chose to implement competitor Chipcom Corp.'s hub last year. "At the time, Chipcom was the only vendor that had announced an intent to support FDDI," explained Mark Oswald, manager of information technology at the hospital. But Chipcom said it does not plan to ship its hub products until mid-1992.

Synoptics announced an extensive product family that includes a new network management system based on Sun Microsystems, Inc.'s Unix-based Sunnet Manager.

Cabletron has focused much of its development emphasis on network management and particularly on its enterprise network manager, Spectrum.

Lotus ups Windows ante with Ami Pro 2.0

BY CAROL HILDEBRAND
CW STAFF

ATLANTA — Lotus Development Corp. renewed efforts to woo users to its suite of Windows applications with the delivery of a major upgrade of its Ami Pro 2.0 word processing software.

Among the new features the upgrade boasts are an outliner, master documents and an enhanced macro language. Also added were Lotus' Smarticons, which allow users to customize their icon palette and create new icons, enabling them to execute frequently used menu commands by clicking on a mouse.

Other word processors have similar features — for instance, Wordperfect Corp.'s Wordperfect for Windows has a customizable menu bar. Ami Pro also includes Adobe Systems, Inc.'s Adobe Type Manager font management software.

The upgrade puts Ami Pro on a similar footing with Microsoft Corp.'s Word for Windows in features, observers said.

Matt Edelstein, a beta-test user at Information Projects Group in Herndon, Va., praised the ease of use of the Smarticons.

"I use them all the time," he said. "What's good is, it permits you to visually associate a lot of features you use often and get at them with a single mouse click."

Ami Pro is available as an upgrade for any user of any character-based word processor for $129.

Lotus also announced a bundling program this week that allows users of any version of Lotus 1-2-3 or any Lotus word processor to get both products together for $199.

According to industry observers, the move is an attempt to stave off market erosion brought on by steep discounts of Microsoft's Excel and Borland International, Inc.'s Quattro Pro spreadsheets. Analysts estimated that unit sales of 1-2-3 fell from 73% in 1989 to an estimated 48% today.

DEC's CFO to resign; fiscal record lauded

BY MARYFRAN JOHNSON
CW STAFF

MAYNARD, Mass. — James M. Osterhoff, Digital Equipment Corp.'s chief financial officer, is preparing to leave the company to "pursue other interests" after a widely respected, seven-year tenure that industry analysts credit with introducing strict financial controls on DEC's bloated operations.

Osterhoff brought savvy asset management and a $1 billion cost-cutting plan to bear at DEC, Wall Street analysts said last week. However, the 55-year-old Indiana native has not resigned his position yet, company officials stressed, and his planned departure from DEC is reportedly an amicable one.

Still, Osterhoff's cost-reduction efforts and emphasis on profitability very likely led to clashes with DEC President Kenneth H. Olsen, said Shao Wang, an analyst at Smith Barney, Harris Upham & Co.

"It would be the classic battle between a traditional, technology-oriented CEO and the bean-counter accountant types," Wang said. "Osterhoff was much more concerned about how the numbers played out, and over time, that probably caused some level of contention" with Olsen.

The former Ford Motor Co. executive is largely responsible for DEC's strong balance sheet, analysts noted. They credited him with guiding the vendor through rapid growth in the mid-1980s as it moved from a $5 billion to a $13 billion company.

Analysts and DEC insiders said this was "as good a time as any" for Osterhoff to announce his departure. DEC's fiscal 1992 plan is now set, and its year-end audit is completed. Another round of layoffs is expected at the close of the first fiscal quarter later this month, as DEC continues to pare at least 10,000 workers in the coming year.

"The powers that be at DEC have vowed to make a profit this fiscal year, whatever it takes," said Terry Shannon, an independent midrange consultant.

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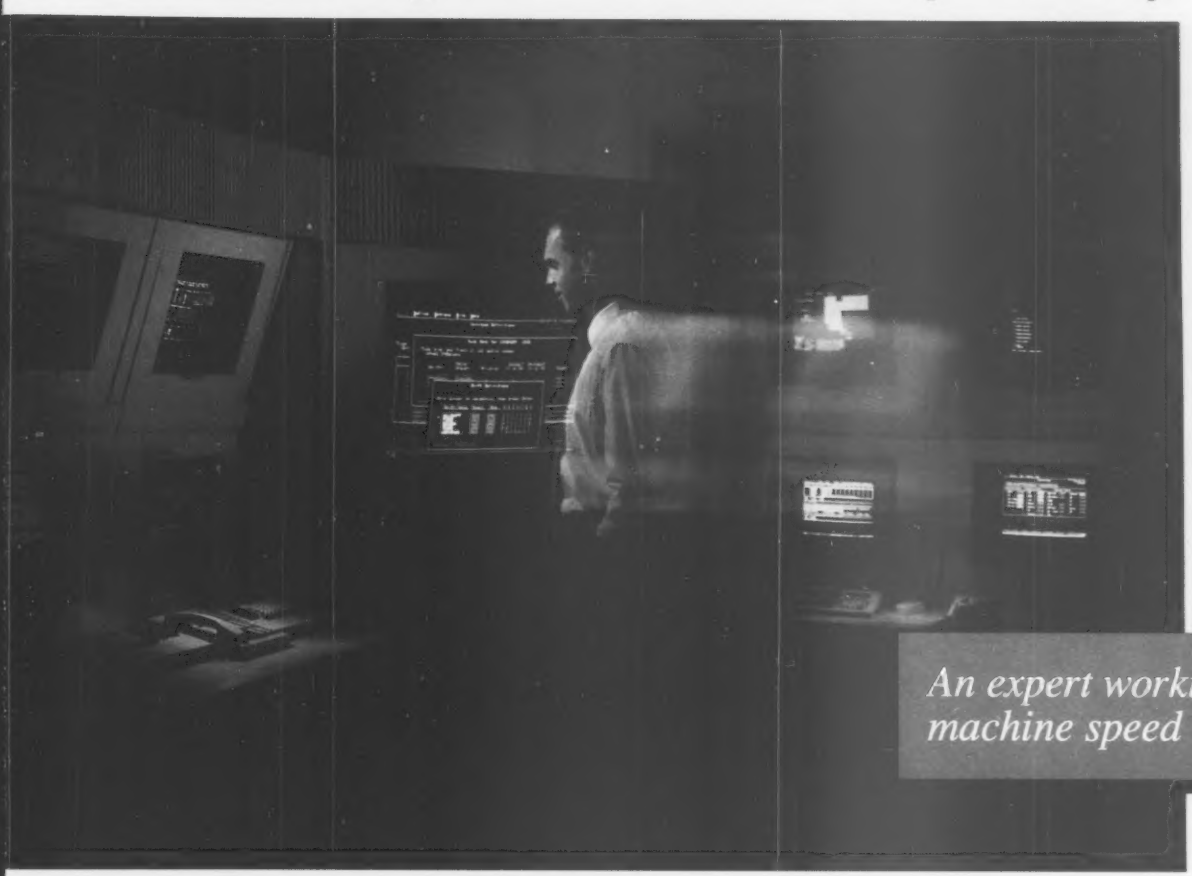

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Knowledgeware execs quit

BY ROSEMARY HAMILTON
CW STAFF

ATLANTA — Knowledgeware, Inc. announced last week the resignation of two top executives, including its president, as part of a reorganization.

The abrupt change contributed to the company's stock drop of nearly 20% and stirred some industry speculation that the departures were tied to questions over last quarter's financial results.

Stepping down were Terry McGowan, president and chief operating officer, and Donald Ellis, senior vice president of finance and administration.

Donald Addington, an executive vice president, will take over for McGowan. The company created a new top financial post, which will carry the title of executive vice president of finance and administration and chief financial officer.

Company officials said that McGowan and Ellis had been planning to leave Knowledgeware for some time and that there was no controversy surrounding their departure.

As of June 30, Knowledgeware showed $41 million in accounts receivables; $11 million of those orders represented payments expected beyond a 90-day period. Typically, financial analysts grow concerned about a company's ability to collect money owed to it if large amounts of accounts receivables remain on the books.

A spokesman said the company had collected by mid-August 56% of the acounts receivables reported in the fourth quarter.

He said that once analysts were alerted to this fact, they felt the accounts receivables were no longer an issue.

He also said the large amount of accounts receivables reported in the fourth quarter resulted from a high level of year-end sales activity as well as a relatively new policy at Knowledgeware to extend payment plans for some customers.

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Vendors battle to win 3Com's orphaned users

BY JIM NASH
CW STAFF

The fight over an estimated 1 million users of 3Com Corp.'s orphaned network operating systems intensified last week. Two of the leading network vendors tripped over each other to present software designed to ease 3Com customers over to their products.

Novell, Inc., the market share leader in local-area networking, announced tools that managers of 3Com's 3+ and 3+Share networks can use to transfer their applications and data to any Novell Netware network.

Within hours, Redmond, Wash.-based Microsoft Corp. said it was shipping its own migration tool, an upgrade to LAN Manager Version 2.0 — an announcement that was originally scheduled for today.

Software incentives

Both companies have offered discounts and other incentives to customers choosing their software.

3Com's proprietary 3+ and 3+Share network operating systems were followed by LAN Manager-based 3+Open. Santa Clara, Calif.-based 3Com abandoned the local-area network market nine months ago to concentrate on wide-area networking hardware and software.

3Com already offers connectivity software that links 3+Open to Netware.

The migration tool kits offered by both Novell and Microsoft were designed to allow networks to remain fully operational whether migration occurs gradually or quickly. A spokesman for Novell said the task can be completed within a day if need be. Microsoft also allows for an incremental switch-over.

Both kits allow servers and workstations on 3Com and their networks to use any resource on either system.

Microsoft said it will develop new LAN Manager products for all 3Com 3Server file servers through 1993. Novell, based in Provo, Utah, sells support software that allows Netware Version 3.11 to run on 3Server/500s and 3Server/600s.

Tough coaxing

It will take more than pricing and software tools to coax some 3Com customers off their current systems. Tom Mills, microcomputer manager at Old Dominion Box Co. in Lynchburg, Va., said he is not happy with either Novell or Microsoft. Old Dominion is standardized on 3+Share.

Mills said it is unclear where Microsoft will go with OS/2, on which LAN Manager is based. He noted that until he is certain what Microsoft is doing with OS/2 development, he will avoid LAN Manager. Mills said that if he moves to Novell, he will go with Netware 3, which means upgrading the Intel Corp. 80286-based hardware he now has.

Novell's migration kit is scheduled to ship in December and has not been priced yet. Microsoft is selling its upgrade for $995 for an unlimited user package.

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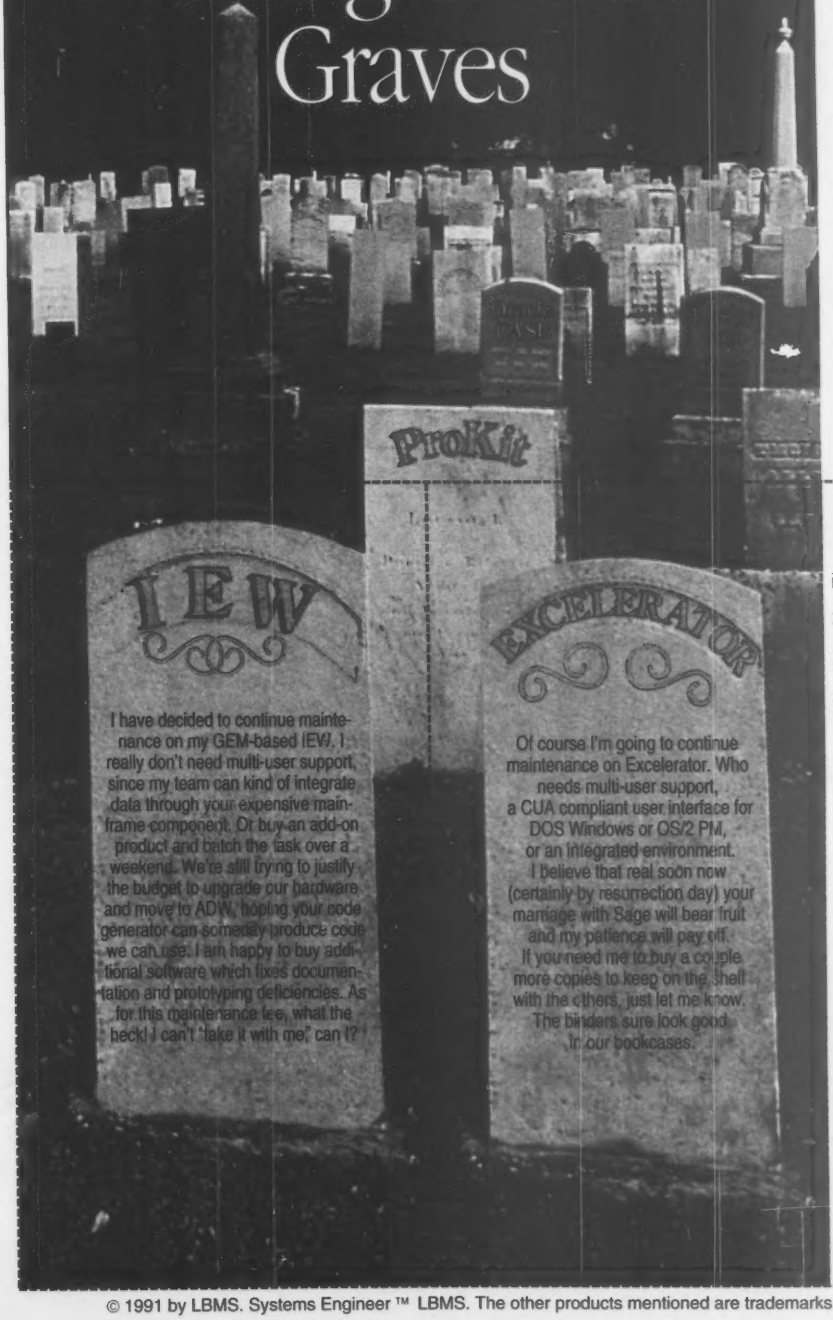

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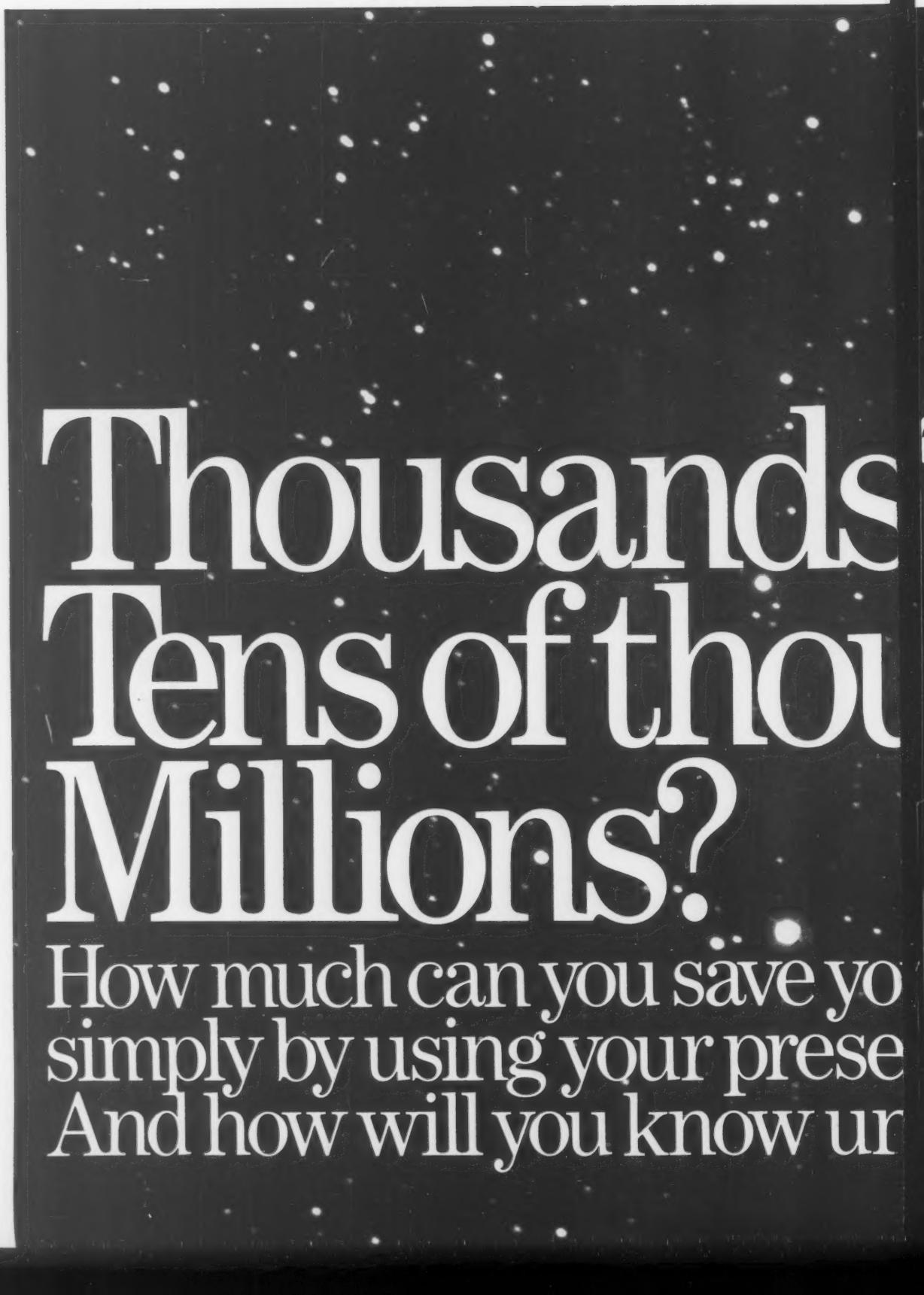
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Compaq system sniffs out net snags

Hardware-based tool for LANs detects error thresholds and major faults before they occur

BY MICHAEL FITZGERALD
CW STAFF

HOUSTON — Compaq Computer Corp. said it will introduce today the System Manager, a hardware-based remote management tool for the Systempro, Compaq's high-end server.

A Compaq spokesman positioned the tool as "one more piece in the puzzle for mini users going down to PC LANs" by giving local-area network administrators a tool that will monitor the network.

System Manager beta-test users agreed. The inability to detect potential problems is a gaping hole in most of the server manufacturers' products, according to Rich Gius, manager of Valuelink and technology services at Baxter Healthcare Corp. in McGaw Park, Ill. Baxter has more than 30 Systempros in place today. "With System Manager, we feel we'll be able to detect various error thresholds and . . . find major faults before they occur."

"Compaq talked to us a year ago regarding our wants in this kind of product, and everything we asked for appears to be in it," said another beta-test user, Glenn Sandusky, chief information officer at Miller Mason & Dickinson, a benefits consulting and administration division of Aon Corp. in Chicago.

Miller Mason is moving the last of its major offices off of Digital Equipment Corp. minicomputers this year and onto LANs. The company has 11 Systempros in place, with a 12th on order.

System Manager is intended as an option for Systempro users but will work with other Compaq Extended Industry Standard Architecture systems as well. The board has its own nickel-cadmium battery and 2,400 bit/sec. modem; it comes with built-in System Manager Facility software designed to run under Microsoft Corp.'s Windows 3.0.

The product does intelligent system monitoring, calls remote locations if something goes awry and will allow LAN administrators to troubleshoot from remote locations, including cold boots. Several features use Compaq-specific chips.

Gius said he thinks the product will help Baxter build more sophisticated networks. "It's in a great position to facilitate alert needs over a wide-area network," he said.

System Manager supports Microsoft's version of OS/2 and LAN Manager, Novell, Inc.'s Netware 3.11 and The Santa Cruz Operation's Unix System V/386. In addition, it is expected to eventually support Banyan Systems, Inc.'s Virtual Networking Software environment. The board will retail for $2,999.

Borland move eases coding

BY JAMES DALY
CW STAFF

SCOTTS VALLEY, Calif. — Borland International, Inc. moved to simplify in-house programming tasks last week with the release of an applications template package that provides a preformed development foundation when creating DOS- and Windows-based programs.

The Application Framework package comes as a new addition to the firm's C++ programming language. Both the Objectwindows and Turbo Vision portions of Application Framework simplify applications development by providing an object-oriented foundation on which to build software. Objectwindows works in the development of graphical Windows applications, while Turbo Vision allows programmers to develop character-based applications.

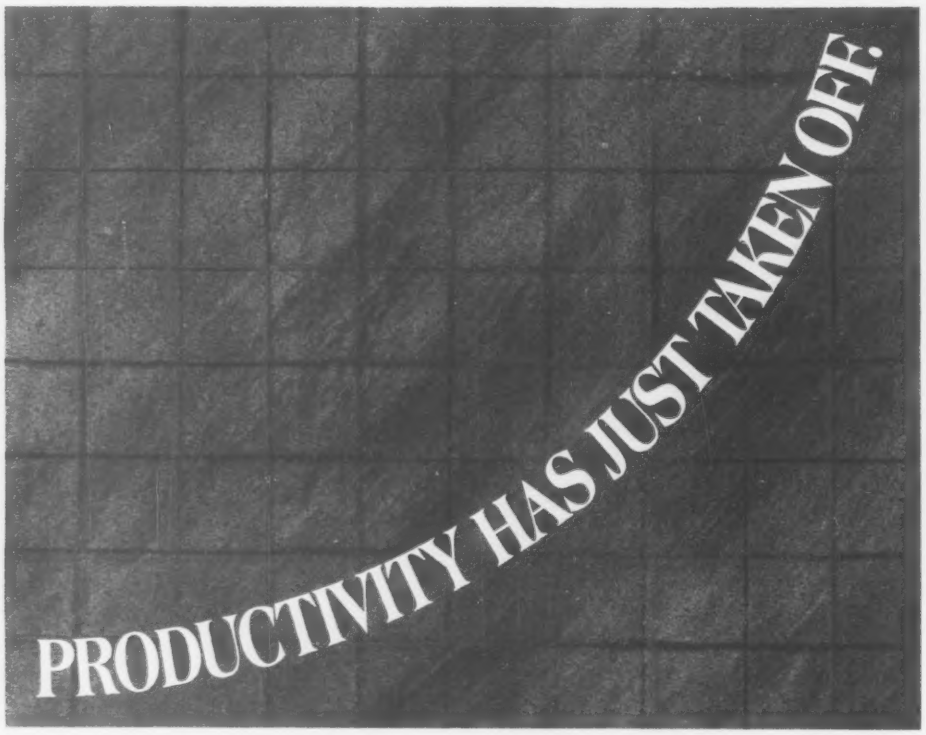
Object-oriented programming is a visually oriented procedure that slashes development time by supplanting rigid programming designs and commands with graphical icons a programmer can easily understand. Code blocks can also later be reused in next-generation applications.

Applying applications

Instead of writing programs from scratch, developers can take the prebuilt applications in Application Framework and customize them to suit their needs, according to Gene Wang, vice president and general manager of Borland's languages business unit.

Programmers can add such features as windows, menus, dialogs, buttons, list boxes, edit fields and icons. Full source code for Objectwindows and Turbo Vision is also included in the package.

Borland's C++ and Application Framework carries a suggested retail price of $695. Borland C++ users can upgrade to C++ and to Application Framework for $199.95. They can also upgrade to Objectwindows for $99.95 or to Turbo Vision for $99.95.



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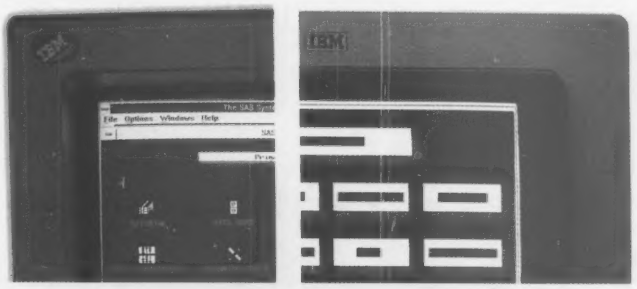

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Oracle postpones Nippon Steel pact

Concern expressed that Nippon may use developer's CASE tools to make competing products

BY JEAN S. BOZMAN
CW STAFF

REDWOOD CITY, Calif. — Oracle Corp. suffered a bout of cold feet last week when the $1 billion software firm delayed closing on a $200 million investment by Nippon Steel Corp. in Tokyo. The deal, which was to have been finalized by Aug. 30, was extended, possibly into October, reportedly because of negotiations about overlapping product lines.

The hang-up: Oracle engineers are wondering whether Nippon Steel's $750,000 systems integration business intends to use Oracle's computer-aided software engineering tools and database code to create competing applications products for sale in Japan and Asia.

At the same time, Oracle asked for a 30-day extension of its $100 million line of credit with an international banking syndicate and began looking for a second syndicate that would loan Oracle $100 million by October, no matter what becomes of the Nippon Steel deal.

In June, Oracle had agreed to sell Nippon Steel a 49% share in its Oracle Japan subsidiary, along with Oracle Corp. stock options that come due in 1995 [CW, June 10].

Oracle sells a worldwide line of financial applications packages that are built on top of its relational database and views Japan as a high-growth market.

"Oracle is providing [Nippon Steel] with database and applications development code that goes beyond what they would provide to their [value-added resellers]," said Terence Quinn, a vice president of software research at Kidder, Peabody & Co., a New York investment house.

"What is catching in somebody's throat at Oracle is that Nippon Steel might end up building applications that could be competitive with Oracle's own applications," he said. Oracle could be seeking a royalty agreement for future Nippon Steel applications packages built on Oracle technology, according to Quinn.

A Nippon Steel executive in New York confirmed Oracle's concerns about his firm's future product intentions. "They will study our company again, particularly as to how [we] will compete in other fields in the future," said Toru Obata, treasurer of Nippon Steel's $19.3 billion U.S. subsidiary, based in New York. Only if Oracle is satisfied will the closing go forward, he added.

Negotiating tactic

The entire affair may amount to little more than a complex negotiating tactic, even though Oracle claims the situation genuinely threatens its positive cash flow. Oracle said it views the Nippon Steel money as a way of paying down its year-old $250 million line of credit, on which $100 million must be quickly repaid. That line of credit was extended last summer by an international consortium of 25 banks, led by National Westminster Bank in London. Now, nearly 20 of these banks, stung by Oracle's 1991 losses, want to leave the syndicate, analysts said.

The negotiating delay could push any new financing arrangements into October. "It's kind of a catch-22," said Michael Musson, Oracle's director of investor relations, "because Nippon Steel won't do the deal unless we have a commitment for $100 million, and the banks won't loan the $100 million unless the Nippon deal goes through."

As a result, he added, Oracle is arranging for a second banking consortium, including some banks from the first, to extend $100 million in credit no matter what happens.

Taking ups and downs in stride

Industry analysts who have followed Oracle's financial ups and downs, which include a dramatic $36 million loss in September 1990, took the news in stride.

"Oracle has said that the documentation for [the Nippon Steel] deal has been completed, along with the financial terms and the [federal] antitrust checks," said Charles Phillips, a senior software analyst at Soundview Financial/Gartner Group, Inc. in Stamford, Conn.

"The last remaining issue, which is not a small one, has to do with a possible product overlap. The applications area is a big chunk of the market for Nippon Steel to give up," Phillips said.

Some longtime Oracle users seemed to be unaware of last week's financial developments. Some even said they doubted whether Oracle's new loans, whatever their source, would have any immediate impact on their information systems shop.

However, Dale Lowery, president of User Group Resource, a consortium of East Coast Oracle user groups, said that users should pay close attention to Oracle's financial situation. "There is a possibility that these Oracle executives won't get [their financing] together," he said, "and that could impact their plans to ship Version 7.0 of the Oracle database in 1992."

ADVANCED TECHNOLOGY

Dr. Tomorrow searches for electronic future

A desire to learn about emerging technologies prompted Frank Ogden to start a company devoted to that cause

From his houseboat in Vancouver Bay, British Columbia, Frank Ogden, a.k.a. Dr. Tomorrow, is plugged into the rest of the world by computer, telephone, satellite dish and other electronic gear. Ogden, 71, is head of 21st Century Media Communications, a company he founded in 1979 that monitors more than 200 satellite channels and 2,500 of the world's top databases in search of the latest developments in high technology and communications. These days, he spends most of his time traveling the corporate seminar circuit painting a portrait of a future that has been shaped by the ongoing revolutions in electronics and information. He spoke with Computerworld's *Advanced Technology Senior Editor Michael Alexander.*

How did you come to be called Dr. Tomorrow?
That's an accolade given to me by the media. I have, for about the last 14 years, been monitoring computer databases and satellite transmissions, first locally and now internationally for most of the last eight years.

Why are you so interested in scanning the globe in search of news about technology, social change and the future?
I used to provide this information to a large number of clients for their field of interest, for instance, medicine. But more and more, as I got known for this, I was asked to give seminars on the subject, and that is now my main source of income.

What is your background?
I really don't have any academic qualifications whatsoever. I consider that my biggest advantage because I just go after what interests me and perhaps give a different slant on it because I haven't been indoctrinated in what to believe.

What are some of the computer databases that you monitor? You must be interested in the Kyoto News Service and others like it.
We have been getting that for years, via X Press, which gives us almost 80% of the world's wire service databases transmitted via satellite in English. That gives you a vast amount of information.

You said earlier that you also monitor satellite TV broadcasts. Tell me about that.
There are 200 satellite channels right here in North America. I have colleagues in Sri Lanka that are doing Russia and India; we do everything between Bermuda, Hawaii and the Equator and the [North] pole from here in Vancouver. Colleagues in the Bahamas and Wales can get us Africa and the Middle East.

How do you keep up with all of the information you gather?
We record it and watch it in fast forward, and it gives you a different view. You see more — not individual events, but waves and trends. Consequently, that gives you a different picture than when you see it in the old slow-moving format.

What kind of personal computer do you use?
I have a Macintosh II with literally the kitchen sink attached to it. We have an IBM PC as well. All of this is tied in with satellite dishes and shortwave radios, videocassette recorders and all kinds of other equipment.

Give me your crystal ball view of the portable computer of the future?
I think for the real afficionados, they are going to get it as an implant. I think you will see something embedded right where you might have a watch perhaps. They could have something with a keyboard that you could click in to allow you to input and retrieve stuff. Instead of on a screen, the information would be read out to you in sound bites.

Now, you may think that is pretty far out. They are already doing work on an osteoport, a permanent port into your bone marrow for injections of any required fluids or antitoxins, innoculations, etc.

Ogden: *There's no such thing as information overload*

Communications is one of your key interests. What role do you foresee for telephone companies as information providers in the future?
It will either be the telephone companies or the cable companies or the Japanese via both. I think we're underestimating the Oriental mind, just like Detroit did.

FRANK OGDEN: BRAIN SCAN

Seeking out emerging technologies *and their effect on society is the goal of Ogden's firm, 21st Century Media Communications*

You are going to see the possibility of a Japanese communications company offering to rewire cities with fiber optics, giving them 100 channels per cable at the same rate that they are now paying for 40 channels and promising not to raise prices for five years. On top of that, you will see them offering to put telephone services through those fiber-optic cables. They will offer telephone information services on a flat rate so that every telephone call in the world becomes a local call.

Where is the computer power that is going to allow you to do all of this going to be — in my TV set or my PC?
No, they will be merged. The television set and the computer are already merging.

What else do you see for the home of the future?
Years ago, we used to have big dining rooms and then that faded away. Now there is a little den in most homes. I think you're going to see the den enlarge and become the information, education and entertainment center of the house. It will probably end up being the biggest room in the house.

What about work? No hope for us working at home?
On the contrary. In Western Canada now, we have one of the highest rates of working at home in the world — 17% of the work force in Western Canada is working from their homes and 10% in Eastern Canada.

What is your assessment of people's technology awareness and their ability to use technology effectively?
During the Agricultural Age, it was easy to keep up because change was so rare. In the Industrial Age, inventions and innovations started coming quite rapidly, but the public was generally able to keep up with the rate of advance. Now the gap is widening, and there is an information elite that is developing, not through anything insidious or Machiavellian, but because people don't realize that the game has changed. We're no longer playing baseball; it's jai alai, and it's a much faster game, and they can't spell it.

I can get as much information as governments and process it faster than they can. People don't realize this because we have been indoctrinated by the educational system that everything has to be A-B-C, 1-2-3, and you have a limited amount of sources. That's not true today. Consequently, most people are afraid of the new technology, and the general level of awareness among the public is lower than during the Industrial Age because they don't believe that they can handle it. I don't believe that there is such a thing as information overload. I think that is a myth.

How do you see the workplace changing? Corporations are already struggling with information overload and not necessarily managing it effectively.
They are horribly behind. For instance, they are still building office buildings. When I look at these high-rise office towers, I see the raw materials for the ghost towns of the future. You don't need that vast amount of physical storage space. Two floors out of every 13 in an office tower is there for storing manila file folders. Meanwhile, one 12-in. optical disc can hold a big city library.

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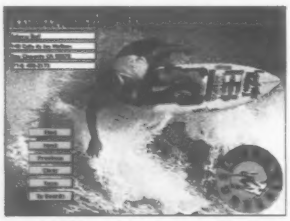

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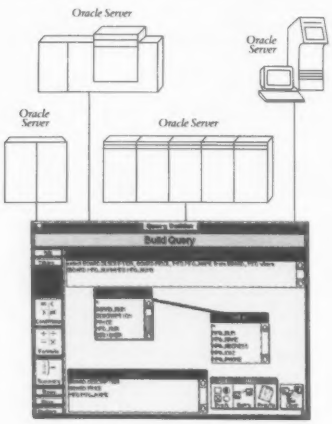

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JOHN GANTZ
INFOWORLD

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CLIENT/SERVER APPLICATIONS.

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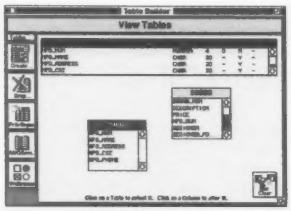
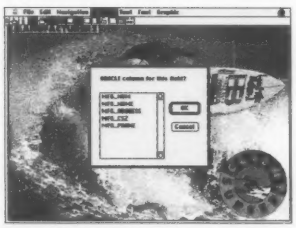
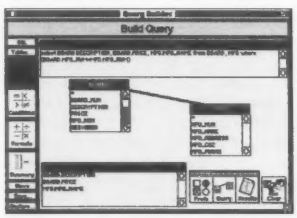


Oracle Card's Table Builder enables end users to build databases without programming.



Oracle Card's Stack Builder enables end users to build multimedia applications without programming.



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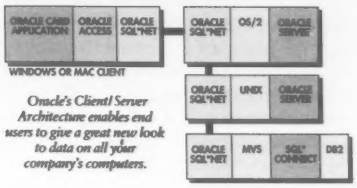

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EDITORIAL

Molecular motion

It is unlikely that IS professionals will ever again witness a time when there is as much posturing and positioning among computer companies as is going on today. For one thing, in the future, there may not be as many vendors around as there are today because some of them are bound to kill themselves or one another by the time the dust settles.

One fact clearly stands out in this tumult: When you have companies such as IBM and Apple in close partnering agreements; when Novell is actively teaming up with anyone opposed to Microsoft; when Sun launches itself into the PC operating system market; when the federal government is investigating monopoly allegations within the two most significant companies in the desktop computing market, it just isn't going to be business as usual.

Perhaps the recession — which has sapped so much purchasing power from IS departments and damned near halted purchasing at others — is a blessing in disguise. After all, it is not getting any easier to make long-term systems plans and purchase decisions when the suppliers are in random, if not chaotic, motion.

When will the vendors realize that what the customers want is order, continuity and choice? Instead, they get chaos, fits and starts and vendor-promulgated "standards."

Tip o' the hat

This week, we present our annual job satisfaction survey, which is the second part of our annual package that began with last week's comprehensive salary survey. From all indications, you, the reader, find this information of great use.

There are two requirements for us to provide such valuable information from these and other surveys. The first is a significant investment on our part to gather and compile this data. For example, our salary survey included input from more than 1,400 IS sites. That takes commitment and that takes resources.

The second and most important requirement is your cooperation, as you are the people who so patiently give our survey teams the data we need. Your time is so valuable, and we appreciate your help more than we can say. In return, the results of quality research are yours.

It's important that you have data you can trust and information that has been scientifically prepared as well as results that can be extrapolated with confidence. So much of what is passed off today as research, such as information from so-called fax polls, is nothing more than a ruse to cover up a lack of financial commitment to providing valid information.

The fact is that there isn't a reputable research organization or pollster in the country that will validate the slipshod fax poll. That's important to know when deciding what information and data to apply to your IS management issues.

LETTERS TO THE EDITOR

Foreign plans

In regard to "U.S. slaps steep penalties on Japanese flat-panel displays" [CW, Aug. 19], if the Japanese, IBM or other manufacturers want to give consumers in the U.S. a bargain, let's take it.

If domestic manufacturers of flat-panel displays or other products want to increase their market share, let them find ways to reduce their costs and to improve their products' reliability.

The collapse of the Soviet Union and its socialist satellites ought to be lesson enough to stop this nonsense of government interference in markets. The use of force through the political process in an attempt to maintain or increase share of market is immoral and, if followed consistently (as a national policy), would be suicidal for the nation's economy.

More power to IBM, Zenith Data Systems, Apple Computer, Inc. and others that may be considering assembly of laptops at foreign plants, thus removing three jobs from our economy for each one "saved" at plants of flat-panel display makers.

F. William Ballou
Williamsburg, Va.

'Fair use' issues

Curtis E. Karnow's column, "Everyone copies software" [CW, Aug. 19], raises very important issues. The basic problem with software copyright legislation is its direct linking to the protection of authors of literary works. In my view, this analogy is fundamentally flawed when applied to computer software.

We in Europe are now subject to the recent European Economic Community (EEC) directive on software copyright, which we believe is going to restrict even more the flexibility that we have had as users in supporting and maintaining our day-to-day operations. It has nothing to do with pirating of software.

The directive does not recognize "fair use" and when the application of the directive occurs in the UK in 1992, it is likely that the "fair use" feature of the present UK legislation will be overridden.

Mr. Karnow has clearly highlighted the implications of such a situation. Lest the U.S. computer users feel this is only an offshore issue, we understand that the objective of the major players in this game is the incorporation of the more insidious implications of the EEC directive in new legislation that is planned for the U.S. and Japan. This would not be in the interest of computer users worldwide.

Paul B. Livesey
Director, information systems
House of Fraser PLC
London

Standards push

In response to "N.J. licensing proposal draws user opposition" [CW, Aug. 19], the ruckus companies are making over the licensing bill in New Jersey shows their overemphasis on the bottom line and a lack of professionalism.

There are several good reasons for licensing of data processing professionals in lieu of certification. Among them are:

- Standards of competency are ensured for those practicing and those hiring.
- Quality of the products and services delivered is improved.
- Customer's confidence in consultants and vendors is raised.

The days of hackers doing what they want without regard to proper methodologies and ethical standards are over. Today's maturing market calls for the same sort of high standards found in other professions.

Rodger Silvers
Fairview Heights, Ill.

Stop that bill!

Regarding the article "N.J. licensing proposal draws user opposition" [CW, Aug. 19], I must add my voice in protest of the bill passed by the New Jersey Assembly on June 27. What we have here is a typical politician's (Assemblywoman Barbara Kalik) ploy to find yet another way to sneak a hand into our pockets.

There are accredited certification sources that can provide the legitimacy pursued by Peter Z. Ingerman. ICCP in Des Plaines, Ill., is one of them. That bloated legislative body in Trenton, N.J., should also be subject to stringent certification.

The question, however, still remains: Who certifies the certifiers, and who in turn certifies them? Let's stop this nonsense.

Frank Hernandez
Commercial Life Insurance Co.
Piscataway, N.J.

Computerworld *welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Laberis, Editor In Chief,* Computerworld, *P.O. Box 9171, 375 Cochituate Road, Framingham, Mass. 01701. Fax number: (508) 875-8931; MCI Mail:* COMPUTERWORLD. *Please include a phone number for verification.*

Telecommuting: Trust isn't the hangup

FREDERICK L. PILOT

With the growing problems of traffic congestion and air pollution choking U.S. cities, it might be expected that telecommuting would proliferate like fax machines and PCs have since the mid-1980s. But telecommuting isn't being embraced with open arms by most U.S. companies.

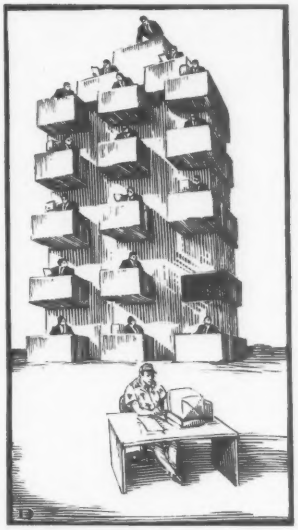
Telecommuting proponents blame managers who say they feel threatened because their subordinates would not be within view each day of the workweek. Diagnosing the problem as a fundamental lack of trust between management and employees, supporters of the idea prescribe management training to teach managers by objective. Managers need to be taught to break their bad habit of management by surveillance, they contend.

When it comes to telecommuting, however, trust — or the alleged lack thereof — is a red herring.

The real reason telecommuting hasn't immediately taken hold is that its implications are quite profound. It alters our traditional concepts of employment and our day-to-day work lives.

Our view of employment is largely based upon the Internal Revenue Service's general definition of employment as a situation in which the employer controls the location, hours and tools by which a job is performed. And this has traditionally meant that work is performed at the employer's premises, not at the worker's home.

This operational definition of "working" is deeply ingrained in the cultures of most U.S. companies — ironically, even those that provide the computer and telecommunications products and services that make telecommuting possible.



Bob Tinkes

When 88 midlevel managers in the San Francisco area where polled last year on their attitudes toward telecommuting, they were asked to identify the main stumbling blocks to the practice at their companies. The resistance, they said, emanates from vaguely reluctant senior managers and telecommuting's perceived incompatibility with their corporate cultures.

In nearly every U.S. office, putting in an appearance at 8 a.m. and leaving at 5 p.m. is as much a part of the collective corporate culture as coffee breaks and water-cooler gossip.

Given such firmly established office traditions, it is no wonder that telecommuting still engenders resistance. Rising levels of business competition, however, are likely to force U.S. businesses to focus their attentions on improving productivity and satisfying customers, rather than on supporting traditional concepts of work.

Many information workers, referred to as "guerilla telecommuters," already telecommute without the official sanction of their employers, but with the full knowledge and trust of their managers.

Eventually, the what of work, rather than the where or how, will become paramount. When that happens, the location where information work is performed will become irrelevant, eventually rendering telecommuting a nonissue.

Pilot is principal of Pilot Group, a market research and development consulting firm in Novato, Calif.

Do you want rusty hands on your expensive systems?

WALTER DANIELS

If you aren't spending money to maintain and enhance your employees' skills, then you are depreciating them. You may not think of it that way, but that's what it is. Of course, you don't mean to make your staff worth less each year by giving them raises and promoting them occasionally. Advancement also includes helping them keep up with what's happening within the computer industry, as well as what your organization does.

Some of you must be thinking, "Why should I worry about my staff depreciating? Shouldn't they be keeping up on their own?" Yes, they should. However, you should also be spending money on upgrading them.

Do I hear you saying, "My budget is too tight?" If so, let me put my proposition to you another way. Let's assume you recently bought a computer system for $500,000. Assuming a five-year life and 20% salvage value, you are writing off $80,000 per year on that machine, plus $5,000 to $10,000 in maintenance costs.

Recognizing that this is a big investment, you probably took not only the purchase of this machine, but arrangements for its upkeep and its potential to hold its value, very seriously. Why would you treat your staff resources differently? After all, you probably have a lot more invested in your staff than you do in hardware.

A programmer starting at $22,000 per year will receive about $227,000 over 10 years, including 5% raises every year. A programmer/analyst starting at $26,000 will receive $327,000, and an analyst starting at $30,000 will earn $377,000. Using the formula that says the ratio of total costs to salary is 1.5 to 1 means that you will pay from $415,000 to $566,000 per person over that period.

Mutual benefits

Then again, your attitude may be this: "Let them pay for their own educations; they're the ones benefiting." That's true, they are. But so are you.

When your employees exchange horror stories and discuss difficulties with colleagues from other places, as they would at a conference or in school, they are learning new ways to do things, which they bring back and apply to support your corporate objectives.

How much should you be spending? Total spending should probably total 10% to 15% of gross income. Seem like a lot? Just think about what you are spending and plan to spend on systems this year and then think about whether you want out-of-date employees either selecting or working on those systems.

Daniels is a consultant based in Indianapolis.

This isn't it, but maybe we do need a law

READER'S PLATFORM

WILLIAM R. PATTERSON

Your article on software designer licensure in New Jersey [CW, July 15] certainly caught the attention of this New Jersey software designer and coder.

As it is currently worded, the New Jersey software designer licensure bill (Assembly No. 4414) has the potential for overly broad interpretation. It says that software designing "means the process of creating software systems and applies to techniques that reduce software cost and complexity while increasing reliability and modifiability, which includes, but is not limited to, the elements of requirements designing, design specification, implementation testing and validation, operation and maintenance and software management."

This is a very broad definition of software designing that some might think would more aptly be called "software engineering."

The bill gives a nine-member board a considerable amount of authority. The board is to be appointed by the governor with terms staggered over five years. Two members are to be from the general public and one from the executive branch of the state government. After 18 months, the others must be license holders.

Among other things, this board would have the authority to set the knowledge requirements for licensing by providing for an examination of applicants. It would set nearly all the conditions of the examination, except for the condition that the exam must be held twice yearly.

Hopefully, this bill will not become law in its current form. However, if it does become law, it will be important for us to provide the board with a significant amount of input.

There are a number of questions not addressed in the bill that would clearly have to be addressed by any revision to the bill or administrative rules promulgated by the board:

- Do the regulations apply to computer programming done on one's own personal computer? If not, at what point do they begin to apply?
- Do the regulations apply to spreadsheet macros and other such high-level process descriptions? The bill does not define the word "software."
- Since "operation" is included in the language of what is covered by the meaning of "software design," will operators have to be licensed?
- If a user is asked to assist in the testing of software, does this mean the user must first be licensed or simply that the software testing must be under the supervision of a licensed professional?
- Will scientific software designers have to know the principles of auditability of accounting software? Or will accounting software developers need to know the relative efficiencies and limitations of different numerical methods?

Even though such an act can portend difficulties, increasingly there are examples of situations in which the public could benefit from additional state authority if exercised properly.

Without any form of licensing of systems professionals, if a software designer or programmer makes outlandish claims in order to get a contract and does not deliver, he can move on to the next unwitting customer. He does not have to explain this practice. There is no danger of license revocation because there is no license.

If a software development company publishes a package that it later has difficulty supporting, it can pull out. It doesn't have to arrange for anyone else to continue support. Depending on initial licensing arrangements, it can even deny others the right to support the code.

I'm not trying to say that licensing will fix all such problems now. However, the public may see licensing as something that will reduce the frequency of the occurence of such things. Over time, we may evolve to a point where licensing will properly address such problems.

We need a dialogue that includes discussion of a number of issues, such as: whether licensing is the best way to ensure the public of its right to competency and responsibility; how much and what kind of work experience should be accepted in lieu of examination; the scope of licensing; and the scope of testing.

Only by having ample dialogue on issues such as these can we sort out what should be done in state regulation of the software life cycle. We may find that something like this bill will be necessary to protect a public tired of the charlatans in this field who can give it a bad name.

Patterson is a consultant and owner of Stratford Technologies, Inc. in Stratford, N.J. He chairs the certification review course committee of the Philadelphia Chapter of the Data Processing Management Association.

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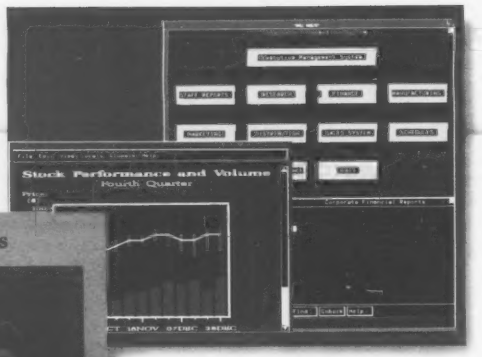

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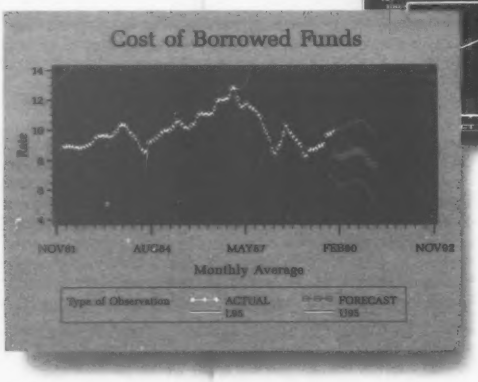

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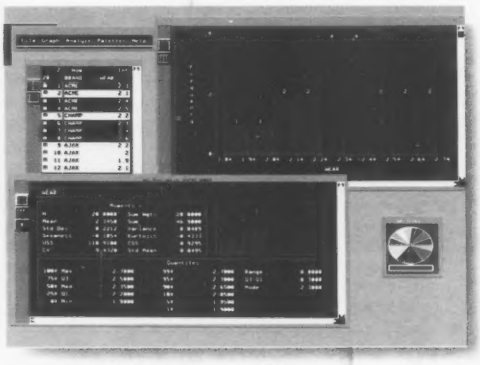

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COMMENTARY

Rosemary Hamilton

Grand plan of all plans?

This week, IBM is expected to announce Information Warehouse, its latest Systems Application Architecture initiative.

With this announcement, users will be looking at three major architectures from IBM: Information Warehouse will address the issue of access to corporatewide data; AD/Cycle handles applications development; and Systemview has systems management covered.

Many industry observers, including some IBM customers, are growing a little skeptical. It seems like every time you turn around, IBM has another big plan for you. And when it comes to these grand schemes, some see more directional statements than fully functional product sets.

What, then, is the value of all these big strategies to users?

First of all, most users will tell you that there absolutely is a value to knowing where IBM plans to go. And this is a relatively new thing. Veteran IS directors will remember that IBM did not always share what was coming next, much less where it hoped to be in five years.

However, with the AD/Cycle strategy, IBM has mapped out its applications development strategy for the next several years. It has told users what it wants to do and which products will play a role. It has drawn a similar map for systems management with Systemview.

Continued on page 30

Oracle gets financial packages into shape

ANALYSIS

BY JEAN S. BOZMAN
CW STAFF

REDWOOD CITY, Calif. — To hear some users tell it, the first year after they installed Oracle Corp.'s financial applications package felt like an amusement-park roller-coaster ride. But the rough starts, bumps and sudden stops caused by software defects and inconsistent support have given way in recent months to a smoother ride.

"The early releases tended to be bug-ridden," said Steven Selfridge, chief financial officer at Checkpoint Systems, Inc. in Thorofare, N.J. "But over the first months of this year, the quality of the releases we got was drastically improved. Oracle's been extremely cooperative."

Usually, a local Oracle software engineer comes on-site to make repairs to the applications code. But if needed, Oracle will send one of the applications developers from California. Some other large sites reported that Oracle has assigned full-time Oracle personnel to work at the customers' offices.

Checkpoint's Selfridge: *Quality has improved*

Noting that committing one's business to a set of applications linked to an on-line database is a fateful step, users said they were willing to work out technical difficulties rather than abandon the code. "The financial software is very attractive to us because it comes with the ability to customize it and to do so without rewriting the source code," one user said. "We are able to take this off-the-shelf software and adjust it to the little quirks in our accounting system."

Checkpoint, a $60 million manufacturer of retail security systems, uses Oracle's financial and manufacturing packages at its suburban headquarters near Cherry Hill, N.J., and at its factory in Ponce, Puerto Rico. Both sets of applications have been running on top of the Oracle relational database management system since January. Checkpoint's experience appears typical for Oracle shops that were surprised by the number of software defects in initial releases of the financial software.

Since the applications began shipping in 1990, users have reported problems with versions for IBM's OS/2 operating system, with underpowered versions running on smaller Digital Equipment Corp. VAX computers and with inconsistent porting efforts to various hardware platforms.

"Oracle put out code that

Continued on page 30

Bull clears the way for GCOS to open systems

BY SALLY CUSACK
CW STAFF

Paving the way for customer access to open architecture platforms, Bull HN Information Systems, Inc. recently announced extensions to its proprietary GCOS 7 and GCOS 8 operating systems.

Dubbed Open 7 and Open 8, the software products use a small Unix server as a dedicated front or back end to the large-scale DPS 7000 and DPS 8000 midrange and mainframe computing environments.

According to John Kozial, manager of MIS at Dukane Corp. in St. Charles, Ill., Bull's new software is doing just what the vendor promised it would.

Koziol said Open 7, in conjunction with a Bull DPX/2 Unix server, allows the company's DPS 7000 342 system to communicate companywide with several different hardware and software configurations over an Ethernet network.

These include computer-aided design systems from Integraph Corp. and Mentor Graphics Corp., as well as a Digital Equipment Corp. Microvax and several IBM Personal Computer clones.

Referring to Open 7, Kozial said the software product "will allow us to hook more users in through either networks or direct connections. The key here is that it is easy to use."

Dukane manufactures professional presentation equipment. This includes filmstrip projectors and microfilm readers, as well as underwater location and multimedia local-area network equipment.

The privately held, $65 million company has been a Bull customer for 20 years and relies on the DPS 7000 for all manufacturing and financial applications. There are approximately 50 users on-line to the system.

Dukane did extensive planning with Bull before the product was implemented, Kozial said. The company launched a small pilot with Open 7, and user response was positive.

Aside from very minor problems, he said, the actual installation went well.

"Now users are coming up to me and saying 'When am I going to get my terminal?' and 'When am I going to get my connection?' " Kozial said.

"It has spread like wildfire around here," he said.

He added that users are immediately realizing the benefits of having instant access to the financial and manufacturing data.

Maurice Gervais, director of marketing for enterprise systems at Bull, carefully emphasized that Open 7 and Open 8 will supplement, not replace, the proprietary GCOS environment.

"One of the problems our customers were having was in supplementing proprietary applications with open system applications," he said.

So far, user reaction to Open 7 has been enthusiastic. Another Bull 7000 user, Bob Jernstadt, vice president of IS at X-Rite, Inc., in Grandville, Mich., said he hoped to have Open 7 implemented across an Ethernet network of 120 users within the next 12 months.

According to Gervais, Bull will be shipping computer-aided software engineering tools early next year that will allow users to develop applications on both Unix and GCOS platforms.

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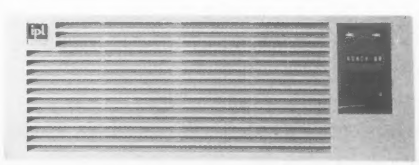

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An EIS turnaround at Met Life

After struggling with awkward system, insurance firm makes it work

ON SITE

BY KIM S. NASH
CW STAFF

NEW YORK — "We crawled before we walked. Now we're running."

That is how Bill Davis, manager of systems planning at the pensions division of Metropolitan Life Insurance Co., described the firm's failed-cum-fruitful executive information system (EIS).

Davis installed Comshare, Inc.'s Commander EIS in 1987 for Ted Athanassiades, executive vice president of the pensions division. Athanassiades soured on the system when it failed to meet expectations.

"The information in the reports I got was always old, and it wasn't all that easy to use," Athanassiades explained.

Fiddling with the keyboard and getting lost in menus frustrated him so much that he stopped using the EIS. "The only thing I know about computers is my screen and mouse. That's all I want to know," he explained. He pushed to have the EIS and the Intel Corp. 80286-based IBM Personal Computer it was loaded on removed from his office.

Four years later, Athanassiades has a new IBM Personal System/2 Model 70 and a new EIS that he calls "indispensable." With an improved graphical user interface, he can comb through four databases of data, such as regional office head counts and corporate budget projections. "I sometimes know departmental information before the heads of those departments do," he boasted.

MetLife

What happened to turn Met Life's EIS around?

"Meetings, a lot of meetings," said Davis, who was assigned to salvage the system in January 1990. Lack of business participation is what killed the first EIS, according to Davis, so he made sure to sit down with Athanassiades and a team of two programmers to figure out how to right the wrongs and expand the system.

After six months, Davis gave Athanassiades a prototype with four kinds of regularly updated data: staffing figures, corporate budgets, sales information and pension division-specific financials. Athanassiades gave Davis the nod to refine the system.

Now, databases are updated monthly, weekly or daily, depending on the time-sensitivity of the information. For example, budget figures are updated monthly, while regional sales data is freshened twice daily.

Meetings are shorter now because members are on top of the latest figures, and fewer paper memos circulate before and after get-togethers, according to Athanassiades. "We no longer talk about numbers. Now it's a qualitative discussion," he said.

Along with Comshare's Briefing Book — a report-retrieval feature that fetches predefined information and was part of the original EIS — Davis also installed Execuview, a Comshare module that allows ad hoc queries, "what if" analyses and business forecasting.

The nature of the new EIS has improved Athanassiades' productivity, he said. He knows immediately if sales have missed the target, for example, and can investigate promptly instead of waiting for monthly reports.

Davis adds a new feature to the EIS, such as a new program or access to a new database, at least once per quarter, based on feedback from the EIS user meetings. The newest doodad is a sales prospecting file. Salespeople keep electronic records on potential clients and send that information from their IBM PC clones to Met Life's IBM 3090 mainframe in New York. Athanassiades reviews that data daily. Soon, he will be able to use his mouse to click on a region on an electronic map and see progress reports from each salesperson in that territory.

Revamping a failed EIS can be more of a management problem than a technological one, according to Davis. Davis said he considers the enthusiasm and suggestions during meetings with users a sign that the EIS is successful. That the EIS has penetrated below senior executive ranks to Athanassiades' six direct reports also stands as evidence that the system now works well.

Neither Athanassiades nor Davis will put a dollar figure on the new EIS' worth. However, with 25 senior executives at Met Life slated to go on-line with the revamped EIS by the end of 1991, Anthanassiades said, he expects business to improve.

Staying on track

Met Life suggests these must-do methods for keeping an EIS on track:

- Corral not just one individual but a team of executive sponsors. If your single backer leaves or loses interest, the EIS goes belly-up.
- Document all of the procedures in installing and running the EIS so if new IS personnel are assigned to the project, no technical information will be lost.
- Meet regularly with business executives who use the EIS to discuss additions and changes to the system.
- Strive for quarterly EIS updates. Add features, such as a new program or access to a new database, at least once every three months.
- Use techniques such as a quarterly newsletter to make information about the EIS accessible even to those who don't currently use it.

IPL Systems to present drives for the AS/400

BY MARYFRAN JOHNSON
CW STAFF

WALTHAM, Mass. — Hoping to reflect the interest of IBM midrange users in affordable disk mirroring, IPL Systems, Inc. last week introduced three disk subsystems for the Application System/400.

The IPL 7936 drives were designed to be compatible with IBM's 9336 disk drives, the latest high-end drives for the AS/400, and will run on the new D models introduced in April. IPL claims its new drives produce superior throughput, take up less space than equivalent IBM drives and cost as much as 23% less.

"This is a good, solid announcement for IPL," said David Vellante, an analyst at International Data Corp. in Framingham, Mass.

Yet Vellante and other analysts noted that IBM is fighting back with its own price cuts — announcing a 9% to 13% decrease on low-end storage products two weeks ago — and special discounts of up to 25% for customers that buy IBM 9336 drives for disk mirroring. The pricing for the new IPL drives was dropped overnight, once company officials learned that IBM had cut the 9336 prices, IPL President Bob Norton said.

Pricing details

The IPL 7936 Models 10, 20 and 30 are priced at $39,600, $48,500 and $63,000, respectively, and offer from 1.8G to 5.3G bytes of formatted capacity. The Model 20 is available now, and the Models 10 and 30 are scheduled to be out by Oct. 30.

The lower price, high reliability and reduced footprint of the IPL drives appealed to The Beacon Cos., a real estate management and construction business headquartered in Boston. Half the company's 10.4G bytes of disk storage on an AS/400 Model B60 comes from IPL, while the other half is on IBM drives, said Dennis Pyburn, vice president of information systems.

New England Memorial Hospital in Stoneham, Mass., saved at least $50,000 by adding beta-test site versions of the new IPL drives to its IBM 9336 drives on an AS/400 Model B60, said Philip Janus, assistant vice president of information services. The performance of the IPL drives also increased his throughput by 20%, he added.

When a problem cropped up recently with one of IBM's 9336 disk drives, the mirrored disk took over its functions during the repair time, and the hospital's system stayed up continuously. "If you want your data safe and recoverable, the only real alternative now is with mirroring," Janus said.

Still, analysts noted that less than 15% of AS/400 users employ mirroring now, mainly because of the substantial expense involved in buying twice as many disk drives.

"Constant uptime has to be critical to cost-justify it," said Greg Strakosch, president of Reliability Ratings, Inc., an independent hardware ratings firm in Needham, Mass.

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Oracle

FROM PAGE 25

wasn't quite production quality and called it a production version," asserted Anthony Ziemba, chairman of the New York Oracle Users Group. "There were some very heated user meetings with Oracle executives last September," said Ziemba, who witnessed the meetings. "But by March, users were getting their complaints logged, and Oracle had some systems in place to fix the problems."

Oracle programmers have since used an in-house software tool, called the Application Foundation, to supplement financial applications code generated by Oracle's SQL*Forms 3.0 report generator. "There is more preparation now," conceded M. R. Rangaswami, vice president of applications marketing at Oracle. "We're not announcing products before they're actually ready. Moving forward, we're planning to set the right level of expectations."

Despite the difficulties cited by users, the financial applications packages, including modules for general ledger, accounts payable, accounts receivable, order-entry and fixed-assets planning, have generated $40 million in sales, Rangaswami said.

Oracle's Koch *added more testing and customer feedback programs*

Sales have been concentrated at 300 user sites. Among the largest are British Petroleum Ltd. (BP) in London, Bechtel Power Corp. in San Francisco and Pacificorp's Nerco, Inc. subsidiary in Vancouver, Wash.

Oracle's moves to improve the quality control program for its applications software intensified in June with the appointment of George Koch as director of Oracle's Applications Division. Koch extended quality assurance processes, supplementing them with more testing and customer feedback programs. He also began a certification course for Oracle's sales and field support personnel.

Customer comments will now be included as part of the design process, which will probably turn to Oracle's own CASE tools for future releases. "We will be supporting our major customers with a team of specialists, adding features and functions to the software where needed," Koch said in a recent interview. "The key is that [software] innovation has to be followed by a quality process to assure the world that the code is stable."

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TEXAS INSTRUMENTS

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Hamilton

FROM PAGE 25

For many users, this sort of information is close to priceless because it helps them make better plans for their futures.

Second, the strategies to some extent streamline the market. Products are either compatible with the IBM architecture or they aren't. Now, at least, users know the teams on which suppliers are playing.

Third, the strategies are an attempt to create standards. Granted, they are IBM-based standards, no matter how often IBM tells you they are open standards, but they do provide a base on which consistent products can be developed.

Now for the downside to these grand plans.

It was just two years ago this month that IBM introduced AD/Cycle and a year ago this week that Systemview was unveiled. Since those introductions, IBM has continued to add to each initiative. With the expected introduction of Information Warehouse, users will be wrestling with a tremendous amount of information on three major areas of their operations. IBM is dangerously close to overloading its customer base.

One user contacted recently said he hadn't had time to pay much attention to the expected release of Information Warehouse. He said he was having enough trouble keeping up with the applications development side.

Secondly, IBM has shown with the first two strategies that it can promise the world to its customers and then only slowly deliver product. Nobody expects vendors to be able to ship such complex product sets immediately, but IBM should take the middle road when it presents these strategies. A little less hoopla at introduction time would save customers from high expectation levels and then the frustration of waiting for products.

The third point brings us back to the issue of standards. IBM needs to do more in recognizing non-IBM environments with these initiatives because other platforms are increasingly important, even to its core customer base.

Some press material from a third-party firm participating in the Information Warehouse strategy shows an official description of this initiative as follows: "The goal of Information Warehouse is to provide users with access to data wherever it is in the enterprise, on IBM systems, or systems of other vendors."

Perhaps we will see a big step forward this week.

Hamilton is a *Computerworld* senior editor, systems and software.

Utilities use CASE to build billing application

BY MARYFRAN JOHNSON
CW STAFF

Three Northwest utility companies have become cross-border compatriots, banding together in a user consortium to share the agonies and the ecstasies of building a new mainframe-based customer service application.

Determined to keep expenses down, Portland General Electric Co. in Oregon, Puget Power & Light Co. in Seattle and Canada's Alberta Power Ltd. in Edmonton are relying on personal computer-based applications development using computer-aided software engineering (CASE) tools from Knowledgeware, Inc.

"This is new for us, using CASE tools to build a system in a really big project," said Doug Averill, information systems manager at Portland General Electric, which, like Puget Power, is a traditional IBM mainframe shop. "In a utility, all your revenues come from this billing system, so it's an important piece of everything we do."

The CS/2, or Customer System/2, project aims to deliver by early 1994 a utility billing and customer information system rich in the kind of customized services and features made possible by relational database technology. One such feature is summary, or consolidated, billing, which would allow the utility to give a multisite commercial customer a single, comprehensive bill instead of the dozen or more it must now deliver.

"CS/2 will allow us to provide a single information repository that keeps track of customers and their needs over time," Averill said.

IBM's DB2 relational database manager and the mainframe MVS operating system are the most likely hosts for CS/2, but the utilities are delaying a final choice of hardware platform until later this year, during the physical design phase.

"We're looking at cooperative processing, and we want to push new technologies," said Bob Collins, manager of customer systems at Puget Power.

Knowledgeware's CASE tools build only host-based applications at this point, but the vendor has a stated direction toward client/server environments.

Three-way effort

The utilities, which serve a combined customer base of about 1.4 million in the Northwest, are splitting the project cost three ways and using their own IS staffs for most of the work. An outside consultant, Axiom Information Consulting, Inc. in San Francisco, is managing the project.

"We are putting a lot of time, money and our top people into a large system that needs to last for a long time," Averill said. "We wanted something where the knowledge was developed by and stayed with the utilities."

An application of this size can cost a utility $20 million to $50 million to develop, industry sources said.

The Axiom consultants provide a variety of services geared to IBM's AD/Cycle applications development environment. Axiom's own CASE methodology is integrated with Knowledgeware's Application Development Workbench software, and IBM has adopted Axiom's methodology for its own internal development use.

The AD/Cycle connection is crucial to the utilities because it promises migration to future technical platforms, said Tim Dilley, director of West Coast operations at Axiom. "These companies never want to go through this again — redefining business rules and redeveloping data models as they're doing now," he said.

The consortium is spending 15 months in the planning and analysis phase just documenting the utility companies' intricate business requirements.

"We haven't designed one screen yet, and we won't even get to that until next year," Dilley said. "The companies are deliberately spending a lot of time talking about the business because it's changing so much."

Since July, each utility has had a 10-person IS team on-site in Portland, Seattle and Edmonton working on different pieces of the data model. The teams work with the Knowledgeware tools on IBM or IBM-compatible PCs running OS/2.

Working around some of the logistical problems of three development teams in two different countries has been a challenge. Federal Express cannot provide overnight delivery to Canada, Dilley pointed out, and different holidays and labor laws play havoc with scheduling.

The teams communicate — somewhat awkwardly — via telephone, fax machine and PC file transfer over 9.6K bit/sec. modems. "It's kludgy, but it gets the job done," Averill said.

Every Friday, the week's work from the Portland and Edmonton sites is downloaded at the Seattle site. Then the Axiom consultants work over the weekend to get all of the changes and additions in sync for the next week's work.

"What's exciting to me is how the CASE tool is helping us capture all the data and keep it manageable. Flexibility is what we're emphasizing here," Collins said.

SOFTWARE SHORTS

Firms to provide tools

Sequent Computer Systems, Inc. has announced joint efforts with software vendors **Informix Software, Inc.** and **SQL Solutions, Inc.** to provide an integrated set of applications development tools for building high-end database applications for its Unix-based Symmetry 2000 computer line. The first set of tools, scheduled to appear early next year, will include a fourth-generation language, a cross-database debugger and a report writer based on productivity tools from Burlington, Mass.-based SQL Solutions, a subsidiary of Sybase, Inc.

Alpha Microsystems in Santa Ana, Calif., signed a three-year OEM agreement for Unix-based reduced instruction set computing (RISC) multiuser computer systems with **Motorola, Inc.**'s Computer Group Technical Systems Division in Tempe, Ariz. Valued at $4.2 million, the contract calls for Motorola's M88000 RISC systems to be marketed by Alpha's 500 dealers worldwide.

Request for Information

SUPPLY SYSTEMS
PACKAGED SOLUTIONS

Telecom Australia is developing a long-term strategy for its Material Supply and Distribution systems. The utilisation of packaged software solutions is being considered as a key element of the strategy.

Suppliers of relevant packaged software solutions are invited to provide information on their products and services to assist in the development of the strategy.

A brief specification of requirements is available.

Material Systems Architecture Team
Scott Warren
International Fax: 612 906 6383
International Telephone: 612 901 0697

The final date for provision of information is October 7, 1991. Information provided earlier than this date would be appreciated and will provide additional time for analysis and interaction with the supplier.

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NEW PRODUCTS — HARDWARE

I/O devices

Architext, Inc. has created the Wildcard font card ($365) for use with the IBM 4019 printer.

The Wildcard contains 246 fonts that can be accessed by personal computers and IBM Application System/400 midrange computers. It is roughly the size of a credit card, the company said.

Architext
Suite 208
121 Interpark Blvd.
San Antonio, Texas 78216
(512) 490-2240

Fastfax/Plus *allows users to send faxes directly from AS/400 terminals*

Quadrant Software has begun shipping Fastfax/Plus, a hardware and software fax product for the IBM Application System/400.

The product works in batch and interactive environments. It allows users to send faxes directly from AS/400 terminals. Features include screen capture, unattended transmission and plain-paper receipt on attached laser printers.

Tiered pricing ranges from $4,995 to $6,495.

Quadrant Software
P.O. Box 2400
Plainville, Mass. 02762
(508) 699-9339

Power supplies

Deltec Electronics Corp. has announced a series of small-footprint power systems for midrange computers and networks.

The 90S series, including models ranging from 8kVA to 18kVA, provides a minimum of 10 minutes of backup power, the firm reported. The units measure 45- by 24- by 32 in. Options include remote status panels and power-warning interfaces for IBM Application System/400s.

Pricing for the line starts at $11,900.

Deltec Electronics
2727 Kurtz St.
San Diego, Calif. 92110
(619) 291-4211

SOFTWARE

Unix software

Lincoln National Information Services, Inc. has announced OPN:Style for Wordperfect (Unix).

The product enables users to produce presentation materials from Wordperfect Corp. Wordperfect documents. Using artificial intelligence, OPN:Style for Wordperfect maintains the integrity of an original document without any embedded font or layout codes.

Pricing ranges from $1,250 (up to 16 users) to $9,800 (up to 256 users). A trial version is available for $25.

Lincoln National Information Services
1300 South Clinton St.
Fort Wayne, Ind. 46801
(219) 455-3901

Cyborg Systems, Inc. has announced the availability of its Solution series software for Unix systems.

The Solution series is an integrated set of human resources and payroll software modules. Unix variants are supported by IBM, Digital Equipment Corp., Hewlett-Packard Co. and other firms.

Pricing starts at $60,000, depending on platform and number of users.

Cyborg Systems
12th Floor
2 N. Riverside Plaza
Chicago, Ill. 60606
(312) 454-1865

Applications packages

The VAX/VMS security management and auditing system Auditor Plus has been announced by Braintree Technology, Inc.

Auditor Plus replaces the company's Auditor package. Enhancements include the Master Audit component, which performs 141 checks for security loopholes, and a detached process that performs security checks at user-specified intervals. The product audits an unlimited number of disks.

The company has also announced Vigil, a terminal and process controller that locks users' terminals after a period of inactivity.

Auditor Plus is priced from $3,000 to $12,000 for a single user, depending on processor. Vigil costs $600 to $2,400.

Braintree Technology
600 Cordwainer Drive
Norwell, Mass. 02061
(617) 982-0200

Utilities

Allen Systems Group, Inc. has announced Remote Timeout by User (RTU) for use with Computer Associates International, Inc.'s CA-IDMS.

RTU allows sites to set IDMS session timeout intervals for each individual user or group of users. According to the firm, the product conserves system resources by logging off inactive users. It also provides security for unattended terminals displaying sensitive data.

RTU runs under MVS/SP, MVS/XA and MVS/ESA and costs from $6,400 (group of 20 users) to $9,400 (group of 50 users).

Allen Systems Group
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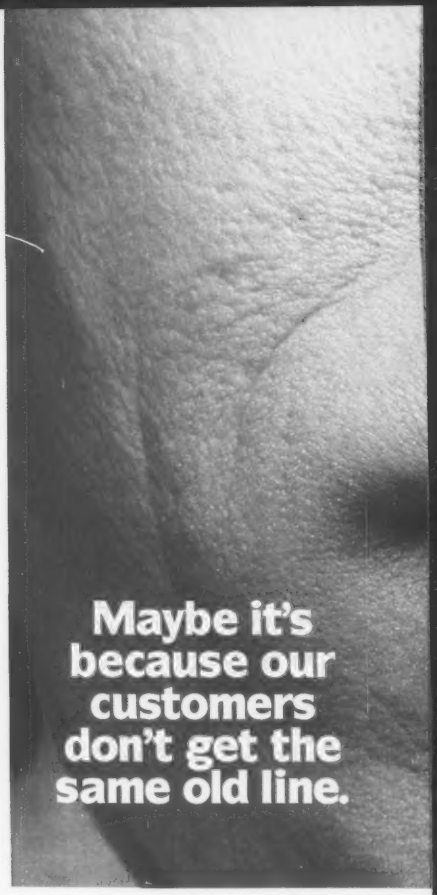

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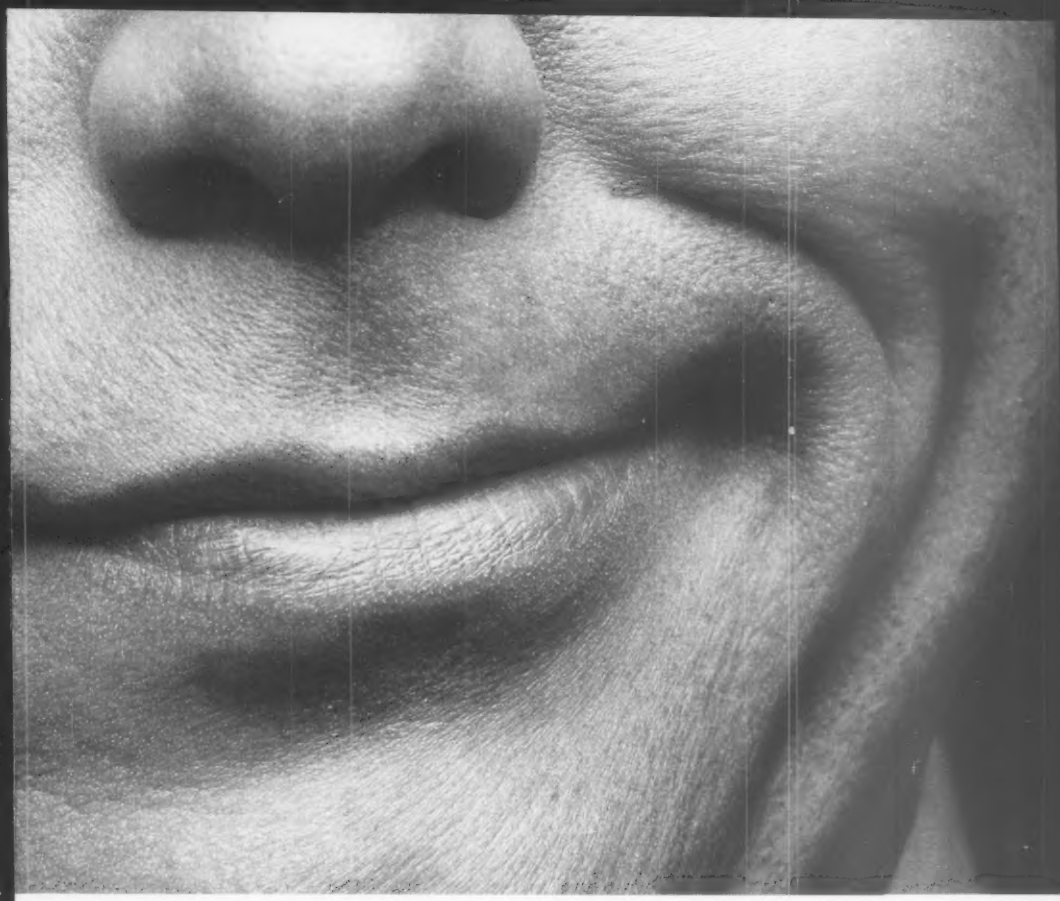

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COMMENTARY

Patricia Keefe

Desktop reality check

I recently moderated a panel of five users and one Microsoft Windows developer/consultant currently involved, to varying degrees, in the throes of OS/2 and Windows implementations. This group, which included representatives from Cigna Insurance, Liberty Mutual Insurance, John Hancock Mutual, Blue Cross/Blue Shield R.I., Fidelity Investments and Synectic Systems Ltd. covered the spectrum from technically savvy end users to IS managers.

Despite their differences, the members of the group were intriguing in that they generally agreed with each other — and not necessarily with market expectations. In addition, regardless of their current desktop strategy, their level of openness toward other choices was quite substantial.

It turned out that for this microcosm of users, several bits of conventional wisdom rang false. For example, three of the users run Windows in a networked environment, at least two of which are based on Novell's Netware.

Now, Windows has acquired a spotty reputation on networks, particularly where Netware is

Continued on page 43

PG&E empowers the enterprise

Utility moving 20,000 PCs to GUI-based groupware environment

ON SITE

BY PATRICIA KEEFE
CW STAFF

SAN FRANCISCO — The confusion swirling about Windows and OS/2 has left some Fortune 1,000 sites frozen in place — but not the forward-looking Pacific Gas & Electric (PG&E), where it is estimated that 90% of the utility giant's raw computing power now resides on the desktop.

In short, PG&E can hardly be described as standing still. In fact, a three-year plan to move about 20,000 personal computers to a graphical, groupware-oriented environment will probably run ahead of schedule, despite a ripple effect impacting all aspects of the desktop.

The vision and the goal at PG&E are to empower the enterprise, primarily by migrating character-based desktops to a graphical user interface or GUI (see related story page 40). "We worked very hard at selling internally to get the company to understand and modify its vision" of the office, said Arthur W. Beckman, manager of PG&E's information technology services.

Beckman's *vision could change PG&E's corporate culture*

Those efforts included distributing 5,000 copies of an IS white paper on empowering the enterprise, holding an annual open house (attended by 3,000 employees last year) and seeding departments with equipment.

The initial plans called for a move to OS/2 to take advantage of multitasking, but PG&E, which had no intention of powering down its GUI plans, was forced to look elsewhere when it became apparent that an acceptable version of OS/2 would not be available for a while. "We really needed to make a decision and move on," Beckman said.

Continued on page 40

Workstation leaders gain in first half of 1991

BY KIM S. NASH
CW STAFF

SAN JOSE, Calif. — The top six workstation makers shipped 40% more units during the first six months of this year than for the same period in 1990, according to Dataquest, Inc., a market research firm based here.

Total units shipped surged to 204,000 vs. first-half 1990's 145,000. For the January to June 1991 period, workstation sales from Sun Microsystems, Inc., Hewlett-Packard Co., Digital Equipment Corp., IBM, Intergraph Corp. and Silicon Graphics, Inc. totaled more than $3.6 million, the report said.

Workstation-only revenue figures for the first half of 1990 were unavailable, but sales for all of 1990 were $2.9 billion, according to Kathy Collins, an industry analyst at Dataquest.

Entry-level presence

Entry-level models priced below $15,000 represented half of all workstations shipped during the first half of the year, the "Dataquest Workstation Quarterly Shipments Report" noted.

Sun's January to June revenue fell just shy of $1.5 billion, outselling nearest rival HP by more than 2-to-1. Sun's Sparcstation 2, IPC and SLC finished among the five top-selling models ranked by units sold during the period, the report said.

Fallout from the Advanced Computing Environment (ACE) consortium has begun to hit the workstation sector, Collins said.

The 4-month-old ACE alliance has grown to include 85 industry vendors, led by personal computer hotshot Compaq Computer Corp., Microsoft Corp. and DEC. The group's intention to develop standards for desktop computing is starting to change traditional workstation market dynamics, Collins said.

Those standards will make it easier for PC makers to build workstations, which generally have higher profit margins than commodity-like PCs, according to Collins.

Furthermore, quick, high-volume production schedules that drive the PC market will step up the pace of workstation delivery, she predicted. That, coupled with the entree of heavyweights IBM and DEC into what has been Sun-dominated turf will incite further price competition in the sector, according to Collins.

The price battle has already eaten into workstation makers' profit margins, especially on their low-end machines, according to the Dataquest report.

Shifting sands

Sun's Sparcstation 2 and HP's Model 425 moved up in the market ranks in mid-1991

Top-selling models: First-quarter 1991

1. Sun Sparcstation IPC
2. ★ Sun Sparcstation 2
3. Sun Sparcstation SLC
4. HP 9000 Model 400
5. IBM Powerstation 320

Top-selling models: Second-quarter 1991

1. ★ Sun Sparcstation 2
2. Sun Sparcstation IPC
3. ★ HP 9000 Model 425
4. Sun Sparcstation SLC
5. IBM RISC System/6000 Model 320 H

Source: Dataquest, Inc.

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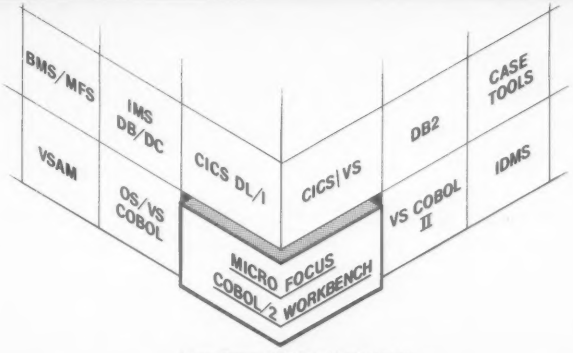

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Comcast turns to imaging after fire

ON SITE

BY MICHAEL FITZGERALD
CW STAFF

PHILADELPHIA — When the phone rang at 2 a.m. one Sunday, Doug Murphy knew it was trouble. The director of MIS at Comcast Corp., among the nation's largest cable companies and a franchisee of Seattle-based Muzak Ltd., was right: Comcast's headquarters building was burning.

Three firefighters died battling the blaze, which started late on Feb. 22 and gutted the building from the 22nd to the 30th floors, where the sprinklers on the first of Comcast's four floors in the One Meridian Building stanched it. Comcast executives breathed a sigh of relief, but that proved premature: The fire had destroyed lighting fixtures and other equipment, releasing toxic dioxin and PCBs that caused the building to be declared an environmental hazard two weeks after the fire.

Because of this, Comcast was barred from removing anything from its offices, even though most of its equipment and records were unscathed.

"We thought it was just going to be a matter of getting things once they gave us clearance," Murphy said.

Instead, the company had to scrap its salvage plan and create another.

At stake were Comcast's 18 million to 20 million documents, including corporate documents — original purchase agreements, loan documents and the like — that were needed to run Comcast's cable, cellular and sound divisions.

To help retrieve the essential documents, Comcast turned to an imaging system running over a local-area network.

"We had to minimize costs and still get a quality image out," Murphy said. "The only way to do that was on an imaging basis."

Murphy looked at several bids, including one from IBM, which proposed its Imageplus system. Imageplus would have required the purchase of both an Application System/400 and a System/36 to act as a disk storage driver. Murphy called Imageplus viable, but because both machines would have to remain in the contaminated building, he decided a personal computer-based system was most cost-effective and flexible.

AP/Wide World

Comcast *used an imaging system to salvage company data after fire damaged its building*

Accordingly, Comcast contracted with Genesys Data Technologies, Inc. in Hunt Valley, Md., a value-added reseller that specializes in imaging. Genesys customized its imaging software for Comcast and installed four networks, all based on Digital Equipment Corp. Decstation 320 models (for price reasons) running over 700-ft-long Ethernet cables.

Comcast had to wait for the management of its headquarters building to approve its recovery plan, which came through on April 22. By May 9, the networks were up and scanning.

That plan called for specially dressed environmental recovery workers to install and operate systems in the contaminated building. The workers, from Peregren Systems, Inc., scanned important documents into the systems for transmission over Ethernet.

Two of the networks shipped images from the 31st and 34th floors to a station in the adjacent building. The other was a direct PC-to-PC feed for retrieving data kept on floppy disks and hard drives in the now hazardous office space. The fourth was hooked into a television and was used as a live video feed for Comcast employees to direct recovery personnel on which documents to keep and which to throw away.

A previous thought

Imaging also fit in with Comcast's earlier thinking.

"We had looked at imaging for the last several years, with respect to changing our way of storing information," said Abram Patlove, Comcast's vice president of planning and development.

Comcast said it expects to continue using imaging in its new offices as a way to reduce paperwork and free up space ordinarily used for file cabinets.

Comcast wound up its document rescue operations at the end of August, retrieving 1.25 million documents, including everything critical to the firm's operation, according to Patlove.

Comcast is now established in a new headquarters, a few blocks from the fire site. Even before the disaster recovery effort got under way, Comcast IS had to support a move into that new office space. Guy Iverson, manager of microcomputer projects at Comcast, pulled together 40 Compaq Computer Corp. 386/20Es in two days.

Within two weeks, Comcast had renovated the new space and was at almost-normal operating levels. It had two IBM 3174 controllers providing links to a mainframe in its Miami data center.

High-end PCs still lack corporate approval

BY JAMES DALY
CW STAFF

High-powered personal computers and workstations may be the technological toast of the desktop market but don't expect them to make a big dent in the corporate world just yet. The reason is a lack of compelling applications that enable users to parlay the power of the machines into a significant competitive edge.

"The processing power in high-end PCs and low-end workstations is at the level of many mainframes, yet there is still no ground-breaking software on the market that takes advantage of the power," said Paul Zagaeski, an analyst at The Yankee Group, which conducted a study on the PC market.

Many users do not see an irresistible reason to write checks for the high-end systems. "Putting a RISC chip on someone's desk just doesn't make sense; it's a matter of overkill," said Steve Anderson, an information systems architect for the state of Washington's department of social and health services. "All we're running on the desktop are some word processing packages, E-mail and Lotus [1-2-3], so we just don't need that level of power."

Offering many uses

One factor that could sway users toward more muscular machines is an application that integrates many business functions, such as word processing, spreadsheets and communications.

"I'd like to see an application that does many things, not just a single function," said Henry Crespo Jr., corporate manager of end-user computing at Torrington Co. in Torrington, Conn. "But right now, there's nothing we can do on a high-end PC that we can't do more inexpensively on a low-end model."

The Yankee Group report states that while the market for personal workstations is growing faster than the PC market in general, the 1.73 million personal workstations purchased this year will still represent less than 7% of the number of desktop systems used in business.

A personal workstation, as defined by the report, has a 32-bit processor, at least 4M bytes of random-access memory, high-resolution graphics and a large hard disk and serves as a desktop system — not a server — in commercial applications.

Personal workstations include low-priced workstations based on reduced instruction set computing technology as well as PCs based on Intel Corp.'s high-end 80386 and I486 chips and Apple Computer, Inc. Macintoshes based on Motorola, Inc.'s 68030 microprocessor.

The Yankee Group also reported that when market demand does begin to catch up with vendor offerings, significant transitional wrinkles will still need to be ironed out. "It's going to take more than a killer application to make the personal workstation market take off," Zagaeski said. "The whole infrastructure of personal computing is changing rapidly."

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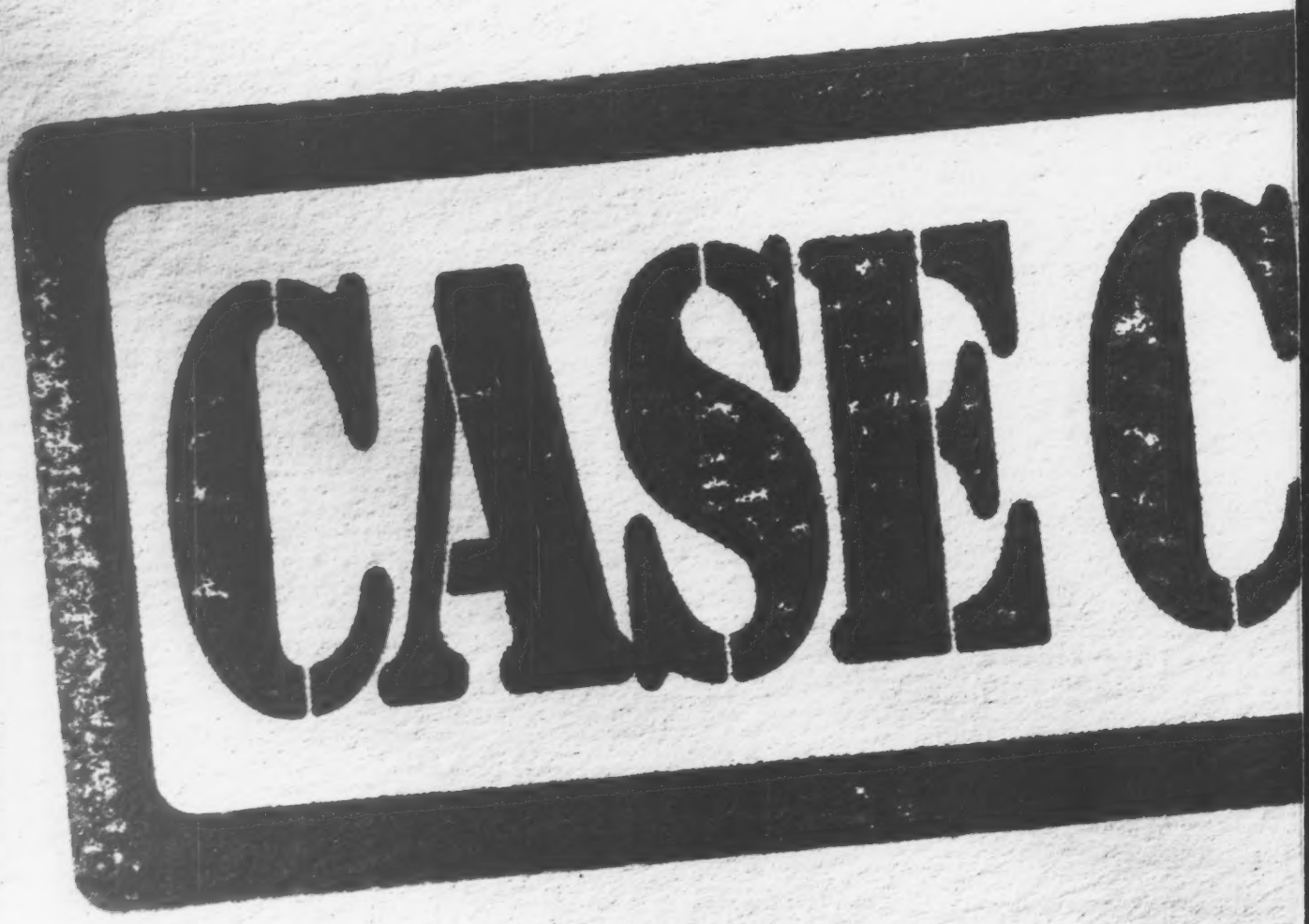

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PG&E

CONTINUED FROM PAGE 33

Multitasking still tops his wish list, but whether it will come via New Technology Windows or OS/2 2.0 is uncertain.

Beckman is also orchestrating a move to Microsoft DOS 5.0, primarily to save chunks of memory for his networked enterprise. "We like to keep away from extended and expanded memory tools. For the price, we thought moving to DOS 5.0 [which costs less than $99 for an upgrade] was worth it," he said.

Another factor in that decision was the desire to eliminate support for multiple versions of DOS.

Along with the decision to standardize on Windows came an unusual opportunity to re-evaluate every application in use. "This was a big enough change that we really took it as an opportunity to clean the slate," Beckman said.

Vendors who did not have Windows applications on the market at the time were invited to demonstrate beta and even alpha versions of their Windows ports. Beckman, who was looking for "best of breed," made every effort not to exclude Windows programs close to delivery.

PG&E was also looking for applications that could be pulled together into a suite that would function as the primary "information-enabling tool set" and be capable of supporting "any time, any place" access to information in any form by any employee.

In the end, a suite of Windows-based programs from Microsoft got the nod. "It just happens that the top products came from the same supplier," Beckman said — Microsoft.

Into these plans fell the introduction of Lotus Development Corp.'s Notes groupware program, which quickly caught Beckman's eye. A client/server adherent, PG&E is building certain applications, such as a SQL database, into a groupware environment. Notes is currently in the test stage at PG&E, but Beckman said he expects it to become "a big, major tool."

Determining the platform and selecting the application suite is just the tip of PG&E's empowerment iceberg. "We had character-based everything on 20,000 PCs. We are now in the midst of a total changeover of everything we have," Beckman explained.

If not handled properly, migration to that extent could provide some nasty and unforeseen surprises, especially given a substantial installed base of Intel Corp. 8088- and "slow" 80286-based computers. Much of that hardware will be gotten rid of. It is almost fully depreciated, Beckman said, so he will consider donating the equipment to charities and schools.

> IN THE END, a suite of Windows-based programs from Microsoft got the nod.

Beckman said there is "no way" that Windows 3.0 can be run adequately on a 286. What is more, "since you know you'll own the equipment for five years, it's getting to where [the I486] price makes sense," he added.

Still, this will take time. A three-year schedule was worked out: 4,000 desktops the first year, about 5,000 the second and the rest the next year. Already, it is looking conservative. In a recent 2½-week period, Beckman distributed 6,000 copies of some Windows applications, attributing the demand to a higher literacy rate among users than had been expected. "We thought we'd do 4,000."

Breaking down the vision

Nine years after the introduction of PCs into PG&E, the utility finds itself at the threshold of an "empowered enterprise," where it expects to reap the maximum benefits of information technology.

The goal is for workers within the organization to have full access to and use of mission-critical information, according to "The Empowered Enterprise," a PG&E white paper on the subject.

Achieving those goals will require both the obvious — deployment of increasingly advanced technology, most notably an applications suite — and the risky — management commitment to taking the steps necessary to create a new corporate culture, the report said.

The base for the empowered desktop includes the following: an Intel 80386-based workstation with a high-resolution color display; a minimum 80M-byte hard disk; an easy-to-learn operating system that supports multitasking and seamless transfer of data between Windows; local- and wide-area network connectivity; access to specialized network peripherals; telecommunications tools; and a basic working knowledge of the tools.

An intuitive operating system will support interoperability and a consistent command set. Suite components cover an array of niches.

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Microphone II: Easy to use, limited protocols

Technology Analysis — a roundup of expert opinions about new products. Summaries written by freelance writer Suzanne Weixel.

Software Venture Corp.'s Microphone II for Windows, Version 1.01, is well designed. But it offers limited protocol support.

Ease of use: Microphone's interface employs simple menus and keystroke shortcuts. The scripting language is strong and includes a 40-script library. But there is no Help system.

File transfer: The file-transfer procedure is complex but easy to learn. There is no status screen, and there are few terminal emulations and protocols (most notably missing is Zmodem support).

Windows compatibility: During installation, a Windows group is automatically created containing 10 icons for accessing on-line services. Notably lacking is support for Windows' Dynamic Data Exchange.

Service and support: Free, not toll-free, technical support is available 9 a.m. to 4:30 p.m. PST.

Value: Although not the most powerful asynchronous communications software program, Microphone II for Windows is well suited to general-purpose communications. Its high price of $295 is outweighed by its ease of mastery.

Software Venture's Microphone II for Windows 1.01

Reviews	Ease of use	File transfer	Multitasking	Service and support	Value	Overall
PC World 4/91	Fair	Poor	Fair	NC	Fair	New version should include DDE
PC Week 1/28/91	No on-line help	Easy	NC	NC	Highly developed, high-priced	Intuitive
PC Computing 11/90	Clearly presented	Limited error-checking protocols	NC	NC	Well-suited to novices	Lack of DDE support frustrating
LAN Times 11/5/90	Excellent	Good	Fair	NC	NC	6.3*
Users						
Doug Eldred, Control Data Corp.	■	■	■	■	■	High-end product and price
Karen Thomas, Martin Marietta Computing Standards	■	▟	▟	▟	▟	Does the job
Mark Pope, Northern Telecomm, Inc.	■	■	■	■	■	Worth the price
Keith Richard, Fifth Generation Systems, Inc.	■	▟	■	■	▟	Script language complete and easy
Bill Cook, Pitney Bowes, Inc.	■	■	▟	■	■	Powerful scripting

Key: ■ Very good ▟ Good ▞ Fair ▪ Poor Reviewer evaluations are excerpts from articles. Refer to actual reviews for details. User and analyst ratings are based on telephone survey. NC: No comment. **LAN Times* ratings based on 1 to 10 scale.

Vendor background information

Software Ventures Corp. was established in 1984 and has 32 employees. The company originally developed software, including the original version of Microphone, for Apple Computer, Inc. Macintoshes. A private company, Software Ventures does not release installation or financial information.

Software Venture responds

Rakesh Chabra, product manager:

Windows compatibility: Version 2.0, which is just starting to ship, allows you to set baud rates faster than 19.2K bit/sec. and supports Dynamic Data Exchange. It adds numerous terminal emulations and protocols, including Zmodem. It has complete, context-sensitive on-line Help and a full-featured progress box for monitoring file transfers.

Asynchronous 3.0Z: Complex but flexible

Future Soft Engineering's Asynchronous Dynacomm 3.0Z

Reviews	Ease of use	File transfer	Multitasking	Service and support	Value	Overall
PC World 4/91	Fair	Fair	Excellent	NC	Good	Most ambitious; confusing design
PC Week 1/28/91	Totally graphical	Many protocols and emulations	Will not run minimized while connected to host	NC	Good	Great Windows program
PC Magazine 4/30/91	Lacks full Windows potential	Makes transfers simple	NC	NC	Price a little steep	Powerful
LAN Times 11/5/90	Good	Good	Average	NC	NC	6.5*
Users						
Bill Bailey, E.I. Dupont De Nemours	■	▟	■	■	■	Feature-rich script language
Darren Polischuk, Shell Canada, Ltd.	■	■	■	■	■	Fine emulator, superb language
Dan Yingling, Microsoft Corp.	▟	▞	■	■	▟	Powerful script language
Analysts						
John Dunkle, Workgroup Technologies, Inc.	■	■	■	▞	▞	Good but pricey
Keith Richard, Fifth Generation Systems, Inc.	▞	■	▟	▞	▟	Weak documentation

Key: ■ Very good ▟ Good ▞ Fair ▪ Poor Reviewer evaluations are excerpts from articles. Refer to actual reviews for details. User and analyst ratings are based on telephone survey. NC: No comment. **LAN Times* ratings based on 1 to 10 scale.

Vendor background information

Future Soft Engineering was established in 1982 and has more than 30 employees. The company has been writing communications software for graphical user interface since the introduction of Windows 1.0. Corporate business partners include NCR Corp., AT&T, Data General Corp. and Microsoft Corp. A private company, Future Soft Engineering does not release installation or financial information.

Future Soft responds

Howard Brazzil, marketing representative:

Ease of use: Dynacomm is no harder to learn than other GUI programs. The Hayes command set can accommodate 98% of all modem setups.

File transfer: A script can be written to provide automatic download/upload for Zmodem file transfers. The remote mode is being revised to perform more like a bulletin board service.

Future Soft Engineering's Dynacomm Asynchronous 3.0Z packs a punch as an applications development environment as well as a Windows communications package.

Ease of use: Although complex, Dynacomm is easy to use. The interface is intuitive but occasionally inconsistent. The powerful scripting language includes commands and functions specific to telecommunications and to the Windows environment. The on-line tutorial and context-sensitive Help can assist novices in navigating the complexities of the program.

File transfer: Dynacomm supports numerous protocols and terminal emulations. File transfers are simple, but there is no automatic download/upload feature for Zmodem.

Windows compatibility: Dynacomm's installation procedure runs under Windows and the program supports dynamic data exchange but does not use Windows' Help system.

Service and support: Free technical support to registered users is available by telephone from 7:30 a.m. to 5:30 p.m. CST. The support is free, but the call is not.

Value: Both the learning curve and the price are a bit steep, but Dynacomm's flexibility makes it easy to use for beginners yet powerful enough for systems integrators. Dynacomm costs $295.

Sidebar sidesteps Windows 'clutter'

BY CHRISTOPHER LINDQUIST
CW STAFF

There may not be coffee stains on reports or stale doughnuts under the "in" pile, but some users of Microsoft Corp.'s Windows said they find their electronic desktop as cluttered and confusing as the real thing. However, users of Sidebar, from Paper Software, Inc. in New Paltz, N.Y., said the product is a quick cure for desktop headaches.

Sidebar, the first product from Paper Software, is a combination tool bar, file manager and DOS command line that resides on the side of the Windows screen. Users can type in DOS commands or click on drive icons to look at file listings, start applications and arrange windows on the screen.

"Frankly, if you've got Windows, you're going to want Sidebar," said Andy Zacolli, financial services manager at Stearms Agency, Inc., an insurance agency in Poughkeepsie, N.Y. A self-described non-power Windows user, Zacolli said he wanted quick access to the applications he used regularly. By adding them to the Sidebar "view," a list of active tasks, he could access the programs without having to flip through windows.

Craig Miller, owner of MG International, a systems analysis firm in San Dimas, Calif., had similar interests. He was looking for an easy-to-use replacement for the Windows File Manager and Task Manager.

Advantageous for applications

Other products he had looked at were either very large and slow or did not use icons. Sidebar filled his needs. "I've found it to be very useful," Miller said. He said he found Sidebar's low memory requirements — it uses about 60K bytes of random-access memory — to be particularly advantageous for such applications as desktop publishing, where memory can be used up quickly.

By the same token, users of low RAM laptops and machines who are running Windows may find using Sidebar to replace the Windows Program Manager and Task Manager will provide valuable memory savings. Unlike Program Manager, Sidebar can be closed without ending the Windows session, allowing its memory to be used by another application. Double clicking on the Windows desktop reopens Sidebar.

Sidebar is scheduled to be available Sept. 16 for a list price of $99.99. It will be available directly from the company and from dealers.

PC & WORKSTATION SHORTS

VESA acts on monitors

The **Video Electronics Standards Association** (VESA) took a step that could lead to better monitors. VESA, the graphics standards organization, outlined a noninterlaced 70Hz vertical refresh rate for 17-in. and smaller monitors with 1,024- by 768-pixel resolution. The standard is intended to eliminate monitor flicker. It will also give buyers of high-resolution monitors and cards an assurance that their equipment will work together, regardless of maker.

Philips N.V. subsidiary **American Interactive Media** and **Funk & Wagnalls** will explore the feasibility of an interactive encyclopedia based on compact disc/read-only memory.

Mt. Xinu, Inc. will give users of its Mach386 operating system small computer systems interface support and a color X Window System server geared to **IBM**'s Video Graphics Array. The add-ons are available immediately.

Packard Bell Corp. recently set up a round-the-clock technical support messaging facility on the **Prodigy Interactive Service**. Users can forward questions and concerns to the clone maker, which promises a follow-up — in most cases, the next business day. The Prodigy forum complements the recent establishment of a public bulletin board system to which Packard Bell users can post queries or download informational bulletins, new drivers and service center listings 24 hours a day.

GE Consulting, a hot line service provider, and **GE Computer Service**, an independent supplier of multivendor maintenance, have combined to create a single end-user hot line organization that will reportedly service the remote hardware and software support needs of their combined customers more effectively.

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New Products From Hyundai	Microprocessor	Speed	Main Memory
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Super-386D	80386	33 MHz	4 MB
Super-386STc	80386SX	20/8 MHz	2 MB
Super-NB386Sc	80386SX	20/10 MHz	2 MB

NOT ON RELIABILITY

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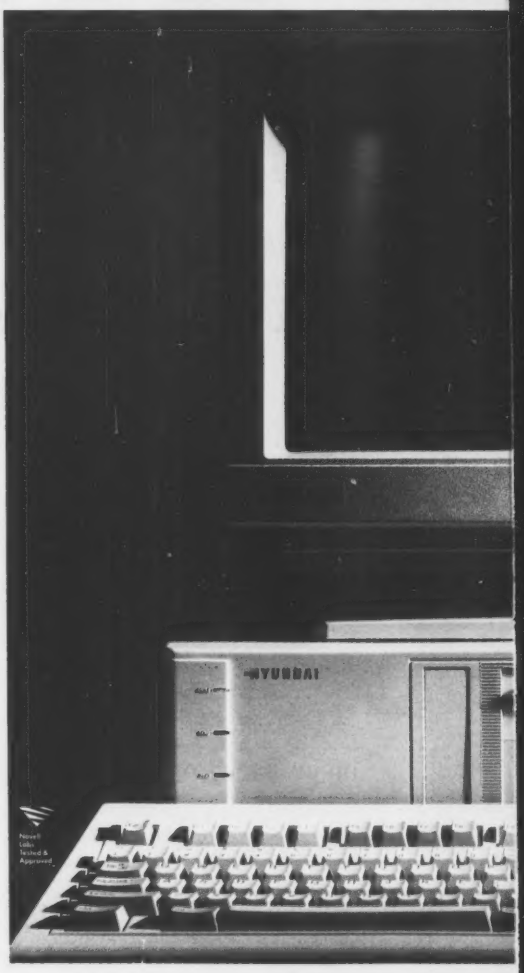

Groupware picking up steam

BY PATRICIA KEEFE
CW STAFF

Groupware in general and Lotus Development Corp.'s Notes in particular collected various votes of support in the past two weeks.

The Software Publishers Association (SPA) has formed a workgroup computing special interest group (SIG) targeted at suppliers of local-area network groupware products. Two organizational meetings of the SIG will be held on Sept. 13 during the SPA's annual fall conference and on Oct. 16 at Networld '91.

One of the group's first projects will be to publish a white paper that will discuss what groupware is, how it works and what technical issues come into play, said Michael Levinger, vice president of marketing at Access Technology, Inc. Early SIG participants include Access, Lotus, Supertime, Inc., Joiner Software, Keyfile Corp., Folio Corp. and Notework Corp.

Corporate Software signed on as the first multinational Notes reseller, announcing three starter kits and a Systems Integration Services program. The Canton, Mass.-based software reseller will offer these services: consulting, on-site implementation and support, remote support, annual maintenance and Notes training. Notes is available in any quantity, but the starter kits come with evaluation support and target pilot projects.

Patricia Seybold's Office Computing Group announced Notes on Information Technology (NIT), which it said is the first computer industry publication published exclusively in Lotus Notes. NIT is actually a Notes database that includes on-line versions of the Office Computing Group's four monthly research newsletters and special bulletins.

Users can employ Notes to engage in on-line discussions with other subscribers or to locate and view data in the context most suitable to their needs.

A charter subscription for the database ranges between $3,000 and $5,000 per server per year.

Keefe

CONTINUED FROM PAGE 33

concerned, but these users reported no problems. Then again, a soon-to-be-released report based on one consultant's and his client's experiences with Windows documents many network problems.

In fact, James Plunkett, director of technical services at Synectic, says he prefers to run Windows on the network. It took him a couple of days to figure out how to set up Windows on the network effectively. "It was more work than we were hoping it would be, but once we figured it out, we found it runs quite well," he says. The rule of thumb would seem to be "proceed with caution."

The same trio of panelists also shot down the idea that users embracing Windows 3.0 are more apt to do so hand-in-hand with Microsoft's DOS 5.0. Why not be current, right?

Instead, the consensus boiled down to "Why rush?" The panelists' installations tended to hover around DOS 3.1, and they said they see little necessity at this point to advance further. As far as they are concerned, DOS 5.0 does not really buy them much. As for DOS 5.0's much vaunted memory advantages, the group was singularly unimpressed.

DOS 5.0 offers subtle advantages, according to Synectic. "We'll move our clients over slowly. It's not like when Windows 3.0 came out and everyone said, 'Good God, this is great. I've got to move over now,' " Plunkett said.

The panel said DOS 5.0 shines where users are running a lot of DOS applications, managing a large hard drive or running several stations under Windows.

Of course, the panelists did not run completely counter to trends. A quick survey of the group determined that OS/2 is heavily driven from the top down by IS, while Windows is more likely to trickle up from the masses below.

OS/2 is firmly entrenched on the server. Even the OS/2 panelists, who were primarily using OS/2 in network or custom application projects, expressed little enthusiasm for OS/2 on the client — all of which means IBM is going to have to launch a massive marketing campaign to address this reticence.

And it's not just users IBM has to persuade. Developers these days are under greater pressure from an increasingly contentious Microsoft to abandon OS/2 projects for Windows.

Looking down the road through a haze of vapor — OS/2 2.0, Windows 3.1, Windows New Technology, Portable OS/2 — the panel's consensus was that they will continue to keep an open mind. Multiple migration did not seem to be a problem as long as user needs were served. It will be interesting to see how this shakes out: Migrations cost time, money and aggravation.

Meanwhile, there is a healthy amount of skepticism out there . Users say they are leery of IBM's talk about how it will support Windows in the future and of the idea of supporting Windows in a box under OS/2 rather than as a peer. But users are also keenly aware, as several audience members pounded home, that New Technology is at least a year away. Who knows what it will look like, they pointed out. Who, indeed.

Keefe is *Computerworld*'s senior editor, PCs and workstations.

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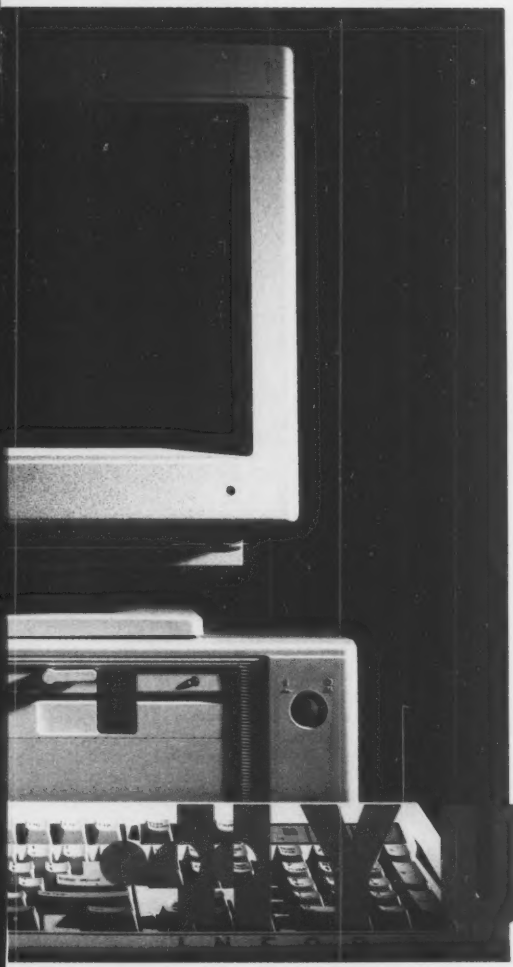

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On The Go Software has beefed up its Expense It software package and lowered the price to $89.99.

Version 2.0 incorporates General Ledger features, allowing Expense It to link with major financial software, the company said. It also transfers files into Lotus Development Corp.'s 1-2-3 spreadsheet.

On The Go Software
Suite 400
330 Washington St.
Marina Del Rey, Calif. 90292
(213) 578-9595

Development tools

Evergreen CASE Tools, Inc. has enhanced its front-end computer-aided software engineering tool.

Easycase Plus Version 3.0 adds a graphical user interface, support for Adobe Systems, Inc. Postscript printers, online Help and improved performance.

The product costs $495. Easycase Professional 3.0 is priced at $649.

Evergreen CASE Tools
Suite 200
16650 N.E. 79th St.
Redmond, Wash. 98052
(206) 881-5149

Flexus International Corp. has released a version of Cobol SPII for OS/2 Presentation Manager.

Cobol SPII enables programmers to control Presentation Manager screens using standard Cobol commands and to incorporate the screens into Cobol applications. The program also allows users to migrate screens and source code transparently across different operating systems.

The Presentation Manager version costs $695. Previous Cobol SPII owners can upgrade for $195.

Flexus International
31-A Blue Valley Drive
Bangor, Pa. 18013
(215) 588-9400

Solution Systems, a division of Software Developer's Co., has created two add-in software products for Brief, its program editor.

Dbrief for Paradox customizes Brief for programming under Borland International, Inc.'s Paradox database management system. Dbrief costs $129.

Briefor C++ includes a browser for the C++ language within the Brief environment. Briefor C++ supports Borland's C++ Version 2.0 compiler and costs $129.

Solution Systems
372 Washington St.
Wellesley, Mass. 02181
(617) 431-2313

Microtech Research, Inc. introduces an integrated software development tool kit for the Mitsubishi Electric Corp MELPS 7700 microprocessor. The tool kit consists of an optimizing ANSI C cross-compiler, a source-level debugger and an assembler with linker and librarian.

The tool kit is available for personal computers and workstations from Sun Microsystems, Inc. and Hewlett-Packard Co. Pricing for the complete kit starts at $2,325.

Microtech Research
2350 Mission College Blvd.
Santa Clara, Calif. 95054
(408) 980-1300

Software utilities

Successware 90, Inc. has created the Babelfish Paradox Data Driver for Clipper (Babelpdx).

The product allows Nantucket Corp.'s Clipper development environment to work with Borland International, Inc.'s Paradox relational database table structures and indexes.

Babelpdx costs $495.

Successware
Suite 410
27555 Ynez Road
Temecula, Calif. 92591
(714) 699-9657

Perfect Software Corp. has introduced Perfect Key, a utility program for use with Wordperfect Corp.'s Wordperfect software.

Perfect Key provides an alternate function key layout intended to reduce keystrokes and make functions more intuitive to perform, according to the company. It also includes Help screens and a style library.

Perfect Key costs $69.95.

Perfect Software
2641 Indian Mound South
Birmingham, Mich. 48010
(313) 647-8161

Macintosh products

Claris Corp. has released Macdraw Pro, a graphics software package for the Apple Computer, Inc. Macintosh.

The product offers full-screen slides, the Claris XTND file exchange architecture for document import and export, dithering and enhanced text and curve-editing capabilities.

Macdraw Pro costs $399. The company has also lowered the price of its Macdraw II drawing package to $199.

Claris
5201 Patrick Henry Drive
Santa Clara, Calif. 95052
(408) 987-7000

The IBM LaserPrinter.

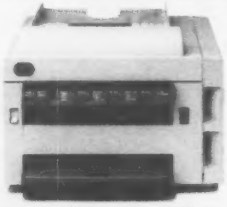

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PHOTO BY KEN TOUCHTON

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Vice President, Computers and Communications
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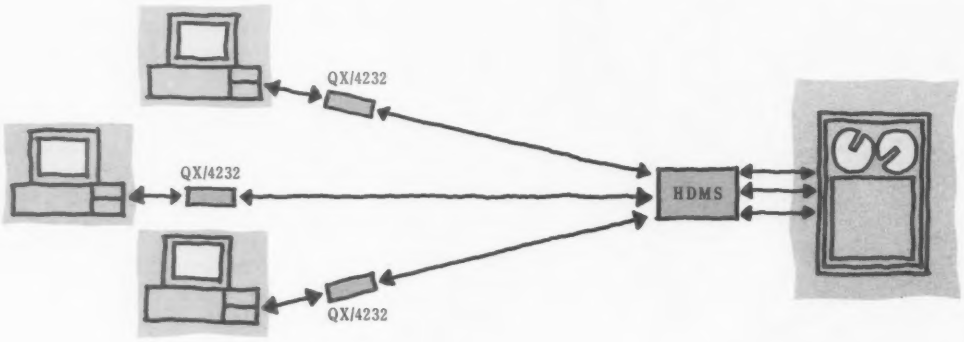

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Shakeup in USSR reveals weak links

BY ELISABETH HORWITT
CW STAFF

One potentially useful side effect of the aborted Soviet putsch is that it may speed some much-needed upgrades to current connections between the U.S. and USSR by dramatizing the inadequacy of the present system.

During the crisis, call traffic levels were 100 times the normal level, and because of the lack of capacity, an average of one U.S. call in 10 got through to the Soviet Union via AT&T, company spokesman Jim McGann said. However, the situation during normal times is not much better, users reported.

Pepsico, Inc., one of the first U.S. businesses to establish a foothold in the USSR, uses personal computers to manage its 35 bottling facilities there, according to Karl Nigl, a vice president in charge of the company's Soviet business. "But we have no direct line over there — the Soviet Union does not have them in those areas where we are operating."

While some companies have set up their own satellite links to the Soviet Union, the cost is prohibitive for Pepsico, Nigl said.

As a result, the bottling operations send key data to Pepsico's Moscow office via fax or voice lines. "We would absolutely welcome better communications; we are tired of waiting months and months for additional telex and telephone lines," Nigl said.

Personal computers are sufficient to process DHL Worldwide Express' business in the USSR, according to Larry Simpson, a human resources director who helped set up the package handler's Soviet company. "Restrictions on bringing in computers have greatly eased; in fact, we have three IBM System/36s in Eastern Europe now."

But the difficulty of setting up direct data lines between the USSR and Europe has forced DHL to use circuitous methods when getting key business data from its Soviet operation to other key divisions. The data is put on disk and then shipped — via DHL, of course — to the company's Hungarian branch, where it is loaded into a mainframe. From there it is sent via X.25 packet-switching links to Vienna "and

Continued on page 52

High technology stands tall in Tokyo

BY LORI VALIGRA
IDG NEWS SERVICE

TOKYO — Two towers burst onto Tokyo's cement skyline in April when the new Tokyo Metropolitan Government Office Building opened its doors, a monument to high technology that the government hopes will reflect what it claims are progressive 21st-century policies.

The tallest building in Tokyo to date, with one tower reaching 48 stories, its constructors also claim it contains some of the most sophisticated local-area network and computing technology yet installed.

Included is a state-of-the-art disaster prevention center resembling a war room and housing twin 200-in. television screens that can be used to view helicopter film footage of natural disasters. There is also a wireless telecommunications system to contact police and fire departments in the event communication lines are down.

The three-building complex combines many administrative functions of the old city hall, which was spread out among more than 30 separate buildings in Tokyo, as well as the mayor's office and the two-story disaster prevention center.

The building is set up to be the disaster control hub for all of metropolitan Tokyo. Its roof is crammed with microwave antennae and a communications satellite dish. In case of a disaster, the government can get information out to the public via television and radio.

Helicopters scanning damaged expressways and neighborhoods can relay pictures directly to one of the 200-in. screens at the center of a four-panel display in the Disaster Control Room. On the other screen, they can view predamage photos and maps stored on compact disc/read-only memory discs.

Natsuko Utsumi/Gamma Liaison

Disaster control center *is at the heart of Tokyo's new metro complex*

Another panel may display a municipal map with red dots showing, for example, traffic pileups on major roads or houses that collapsed during an earthquake. The information is called in on wireless telephones from police and fire departments and Japan's Self-Defense Forces. The fourth panel shows the activity at local police and fire departments.

Although it seems ironic that the government of one of the most geophysically unstable cities in the world would erect such a tall disaster prevention center, architects took precautions against the earthquakes and typhoons that plague Japan.

The building was constructed using strong vertical beams that will sway in a long "S" shape along with an earthquake or heavy winds.

The floors of the two computer control centers, one housed in each of the main towers, are constructed of rubber dampers to counteract the effects of an earthquake and keep the multimillion-dollar computers from tumbling over or shaking too much. The measures can reduce an earthquake of seven on the Japanese scale to a more manageable magnitude of five.

The two computer centers, one on the 10th floor of the tallest building, Building 1, and one on the 18th floor of Building 2, control both the computing and

Continued on page 50

Integrated voice/data applications proving profitable

BY JOANIE M. WEXLER
CW STAFF

NEWTON, Mass. — Investments in integrated voice and data applications are paying off, according to survey results released last week by Business Research Group, a market research firm here.

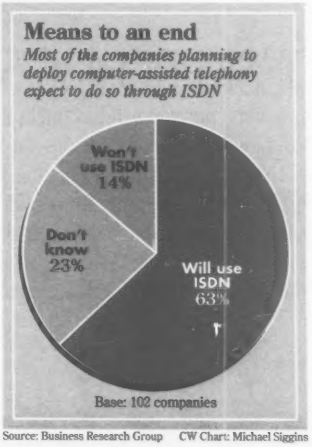
The survey queried 200 organizations with annual telecommunications expenditures of $1 million and up. Forty-seven of the 200 are already using computer-aided telephony — the interchange of information between telephone equipment and computers — and 40 of those users (87%) said they are realizing their anticipated savings.

The report also indicated that a growing number of companies are planning to support the technology and that the growth bodes well for the future of Integrated Services Digital Network (ISDN). ISDN is one means of delivering the merged voice/data applications.

Half the users currently supporting computer-aided telephony said they also intend to implement ISDN. Just 7% of the 200-organization survey base are ISDN users today, although 56% described themselves as potential ISDN customers.

Pennsylvania Blue Shield in Camp Hill, Pa., is currently merging voice and data without ISDN, according to Stuart Feeser, manager of telecommunications. However, he said, "ISDN is coming because it provides a set of rules to connect to the public switched network and provide all your services on a common access line. Customers have wonderful opportunities to get software-based, manageable services quickly."

Feeser said Pennsylvania Blue Shield's application already saves 10 to 30 seconds per phone call by streamlining calls that are answered by voice response units but cannot be effectively handled by machine. He said the company receives between 14,000 and 15,000 telephone calls per day.



Source: Business Research Group CW Chart: Michael Siggins

When the voice response unit at the insurance carrier "discovers" that the call is too complicated, it kicks over the information already gathered along with the voice call to a customer service representative. This prevents a subscriber from having to provide information twice, Feeser said.

The director of technology at a large Southern bank said he has several computer-aided telephony applications in place without benefit of ISDN, but he plans to host an ISDN seminar for his applications programmers in conjunction with his local telephone carrier "to find out what ISDN can do. This way, when we design next-generation applications, there are facilities" to support ISDN, he said.

The bank user said he expects to be using ISDN by 1992, "but not on a grandiose scale."

Rebecca S. Diercks, industry research analyst at Business Research Group, said that the National ISDN-1 initiative announced in February "should go a long way" in whittling away what 22% of survey respondents cited as the No. 1 barrier to implementing computer-aided telephony: vendor incompatibility.

National ISDN-1 is an industrywide effort to allow all ISDN equipment and telephone switch vendor products to interoperate. Since National ISDN-1 was announced, five of the seven Bell operating companies have reportedly increased the number of central offices they plan to equip with ISDN by 1994. Long in coming, National ISDN-1 is slated to kick in during 1992.

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Novell modules add new features to Netware 3.11

BY JIM NASH
CW STAFF

PROVO, Utah — Novell, Inc. continues to fill out its Netware Version 3.11 network operating system, this time adding wide-area networking capabilities formerly available on Netware 2 or dedicated routers.

The company announced updates of its Link/64 and Link/T1 software routers, making them available to Netware 3.11 as a Netware Loadable Module (NLM). Link/64 provides connectivity at speeds of up to 64K bit/sec., while Link/T1 ties networks together over T1 leased lines.

Glenn Fund, principal research specialist at Lockheed Sanders, Inc. in Nashua, N.H., said the addition to Netware 3.11 is not aimed at companies with complex internetworking needs like Lockheed Sanders.

Rather, it is aimed at medium-size firms with limited information systems budgets and modest protocol requirements. Lockheed Sanders, Fund said, is not using either Link tool.

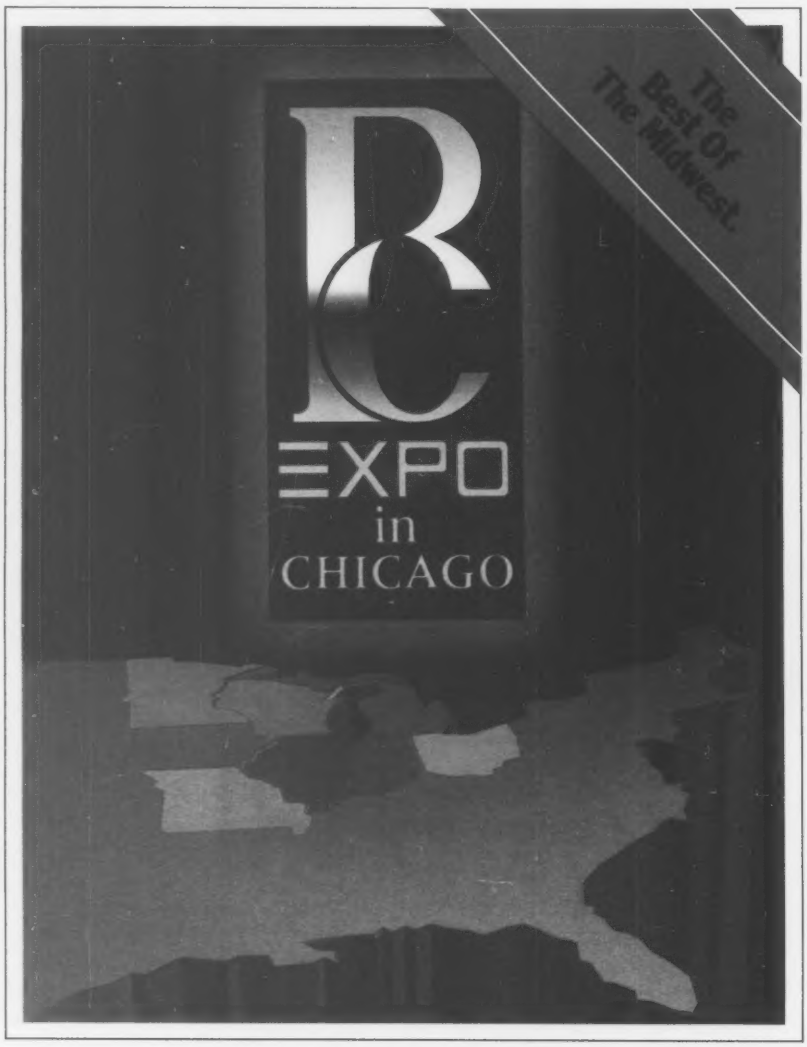
Fund said Lockheed uses Cisco Systems, Inc. routers because of its multiprotocol needs. While Novell's software supports Internet Packet Exchange, Lockheed requires support for Transmission Control Protocol/Internet Protocol, Digital Equipment Corp.'s Local-Area Transport and Sun Microsystems, Inc.'s Network File System protocols.

Previous versions of Link/64 had to be run on dedicated machines, said Vic Pigoga, a project leader at Blue Cross/Blue Shield of Rhode Island. With Version 1.1 of the software, Pigoga said, he can load it as an NLM alongside Novell's Systems Application Architecture gateway and print-server NLMs on a server.

The process ultimately saves Blue Cross money because fewer workstations are needed in the computer room to run the network, Pigoga said. One version, he explained, can save up to $5,000 in duplicate hardware. Pigoga, a beta-test user of Link/64, uses the software now primarily for mainframe-to-personal computer connectivity.

Another beta-test site user, who asked not to be named, said Link/64 is short on diagnostics. He explained that the software does not provide instant status checks on each line in or out of a router. It is necessary to run a separate Netware utility to inspect line status, he said, but it means logging out of what he is doing and logging on to the Surveyor application.

Both applications are now shipping. Link/64 software costs $1,496; Link/T1 software is priced at $3,995. Upgrades from Version 1.0 of each package bought before July 1 are free.



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CONTINUED FROM PAGE 47

networking for administration and maintenance of the building.

Separate networks in the building handle office automation, building control and telephone and municipal disaster prevention. The office network is tied into a 100M bit/sec. fiber-optic LAN, which branches into 10M bit/sec. LANs on each floor. The building is cable-ready to easily add LAN terminals: Power supplies and telephone cables are accessible by merely pulling up a floor plate by hand and plugging in.

Another system monitors the operations of the 7 km of fiber-optic cable laced through the three buildings, and six other computers keep track of the 300 km of branch LAN lines.

Each of the three buildings has a management control center that monitors air-conditioning, electricity, lighting, the 88 elevators and 18 escalators and disaster prevention. Those functions are tied into and controlled by the branch LANs. For example, sensors around windows on the east side of the building control lighting, and time sensors intensify or dim lights in corridors.

The building control LAN includes a Fujitsu Ltd. magnetic card system that government employees point to proudly as the latest in technology. The card system acts as a time clock to note when people come and go and is used to access conference rooms and locked doors.

The telephone system consists of 2,000 digital private branch exchange lines. A mail distribution center in the first basement delivers the mail automatically to each floor using a dedicated elevator system that handles about 10,000 pieces of mail per day.

However, for all the technology, the sudden influx of 13,000 employees into the new building caused some basic problems: Trash disposal is bogged down, and electric bills are about three times higher than in the previous, smaller facility in central Tokyo. In addition, fire alarms go off regularly because smokers overflow the relegated "refresh lounges" on each smoke-free office floor.

Although Tokyoites line up daily to wait half an hour or more to tour the tallest of the three buildings and peer from its lookout tower, few seem to have warmed to the structure designed to symbolize high technology in the 21st century. "It looks angry," one first-time visitor said. "It's cold," another said, "though there is something strangely beautiful about it."

Wellfleet, 3Com move SNMP to new role

BY JIM NASH
CW STAFF

Simple Network Management Protocol (SNMP) is making a shift from its commonly accepted role as a protocol for disparate systems monitor devices to an active management mode. The change is encouraging for network managers.

Since it was first published in 1988, SNMP has been used to create a level playing field for makers of software and hardware monitoring tools. Information systems managers are now expressing optimism about active management of networks using the protocol.

Two companies, Wellfleet Communications, Inc. and 3Com Corp., recently said they are designing their products to work with many or all SNMP-based management tools. Should much of the networking industry fall in with 3Com and Wellfleet, the promise of running management tools on machines regardless of their brand name could be realized.

Wellfleet, a Bedford, Mass.-based maker of bridges and routers, announced shipment of its Network Configuration Utility software. The application enables managers to configure routers remotely. Wellfleet said the utility is the first of many applications that will run on Sun Microsystems, Inc. SNMP-based workstations as well as on Wellfleet's own SNMP-based management consoles. Wellfleet has said it plans to expand the number of vendors with which its future products will work.

THE PROMISE of running management tools on machines regardless of their brand name could be realized.

3Com, in Santa Clara, Calif., took a step in a different direction. The wide-area networking systems firm announced that network administrators will be able to manage future versions of its adapter cards from any SNMP-based management tool.

Eric Benhamou, president and chief executive officer of 3Com, said he intends to unveil free upgrades to the company's existing Ethernet boards and a new fiber-optic data distribution interface card at the Interop '91 and Networld '91 conferences this fall. All will include the ability to be managed by all SNMP and Heterogeneous LAN Management (HLM) protocol-based devices. HLM has been written by both 3Com and IBM. No products today support it.

"My first reaction [to the 3Com and Wellfleet news] is excitement," said Gary Hakoda, senior vice president of IS at Central Pacific Bank in Honolulu. His second reaction is caution, he said. "I remember the first IBM-compatible clones that were not 100% compatible."

"The intention of SNMP is that [a management application] running on one device can collect information and pass it up to a different device or vice versa," explained Bob Buchanan, general manager of Lanquest Group, Inc.'s San Jose, Calif., testing laboratories. Buchanan said the movement toward adoption of SNMP strategies is growing as vendors react to user demands that networks become more controllable. Other vendors are working on similar management strategies.

Hakoda said announcements like 3Com's and Wellfleet's are the beginning of a cost-saving wave of management products. The key is being able to run one or more companies' software on another company's hardware rather than rigidly pairing each firm's application with its own machine.

High tech aids flow of news

BY PATRICIA KEEFE
CW STAFF

A loosely constructed network of electronic mail and bulletin board systems played an important and somewhat invisible role in linking resisters of the short-lived Soviet coup to one another and to their Western contacts.

While the hard-line Soviet junta was in a position to monitor television and radio broadcasts as well as satellite-fed communications, the activity snaking its way across a warren of mostly informal, Unix-based messaging systems would have been much harder to track, assuming the government knew of its use.

"The uncontrolled news sources surprised the plotters," said Jane Kitson, Lotus Development Corp.'s business development manager for the Soviet Union. "They never thought of a bulletin board being used by [Russian Federation President Boris] Yeltsin." She estimated there are about 600 bulletin boards in operation across the Soviet Union today.

Technology to the rescue

While Yeltsin's use of a cellular phone has been highly publicized, that technology was mostly used in the Baltic states. Kitson and Nantucket Corp. President Larry Heimendinger, who also maintains an office in Moscow, said that Yeltsin's supporters mostly relied on E-mail.

"There was nothing sophisticated about this. It was like a big chain letter," Kitson said. "Users bridged the gaps between mail systems by [operating as] arbitrary nodes," Heimendinger added.

Kitson said 12 employees of VNIPI Statinform, Lotus' master distributor in Moscow, heeded the call to man the barricades outside the Russian Parliament, leaving behind one worker to monitor incoming E-mail.

Those same employees also got their first report Aug. 21 via E-mail that the coup leaders had fled the city, but this time the report came from Lotus' Dublin-based facility. "They were sending bug fixes over the line and simply attached the contents of a BBC broadcast to the end," she said. Thirty minutes later, the Soviet recipients were spreading the news.

There is no formal E-mail system in the Soviet Union, Kitson said. Those that do have E-mail, such as universities, hackers and some private business ventures, have built their own systems, often adding databases and bulletin boards.

However, Esther Dyson, editor of Edventure's "Release 1.0" newsletter and a specialist in Soviet computing issues, said that Demos, a Soviet cooperative with ties to the Soviet Institute of Atomic Energy, developed an E-mail system called Relcom, or Reliable Communications. It is a Unix-based, store-and-forward host-based system with 20-plus hosts scattered across the country. "It's like an extension of Internet," she said.

Much the way many bulletin boards are started in the U.S. by "noncommercial, antiestablishment people who don't believe in the market," Dyson said, Soviet E-mail and bulletin board systems tend to be run by "commercial, antiestablishment people who believe in the market."

USSR

CONTINUED FROM PAGE 47

then the rest of the world," Simpson said.

Radisson Hotels International, Inc. uses fax to transmit reservations from its computerized reservation center in Omaha to its hotel in the Soviet Union. "We have been trying to get an international dedicated line in there so we wouldn't have to rely on the [public telephone] network," explained Derek Mattes, a computer systems specialist at the reservation center.

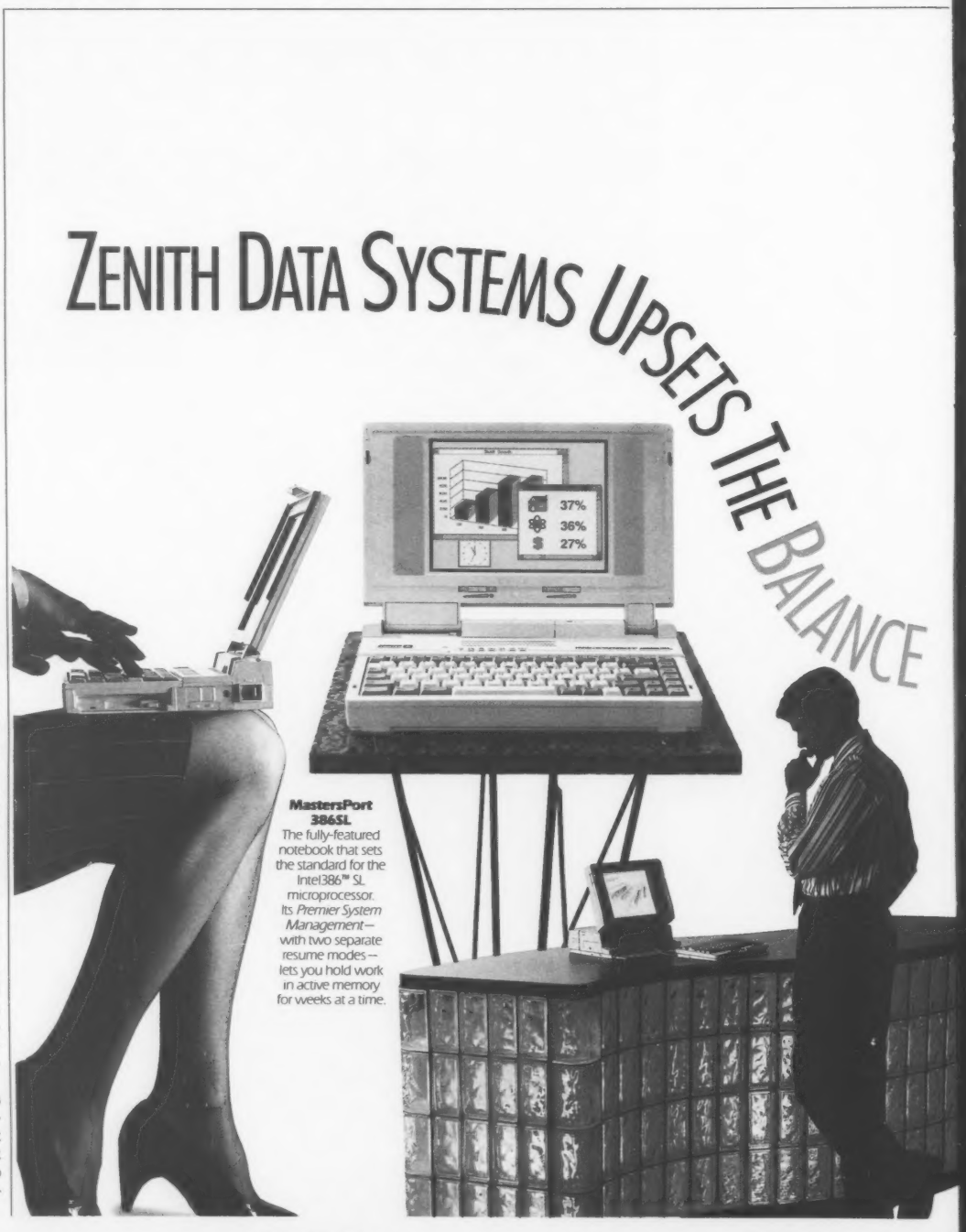
During ordinary times, it takes many attempts to get a fax through, Mattes noted, adding that during the coup attempt, nothing got through.

"Specialists in data communications have told me that for years they have had access to backdoor Soviet electronic mail networks," often going through a series of hosts in different countries to get to their ultimate destination, said Justin Friedman, managing editor at "Eastern European & Soviet Telecom Report," a Washington, D.C.-based newsletter [see story at left]. "But everyone wants to put in direct links because no one knows what could happen to the indirect links."

Changing times

United Parcel Service, Inc. does provide electronic links — via a packet-switched network — between a personal computer in its Soviet office and its data center in New Jersey. "I actually have Soviet employees accessing my mainframe," said Douglas Fields, telecommunications manager at the firm. "How the world has changed."

While U.S./Soviet relations may have changed, the communications links continue to stymie free inte.action. AT&T has 67 circuits to support all of its traffic between the countries, and other carriers have fewer than that. The Federal Communications Commission is in the process of figuring out how to allocate 90 circuits now available on the Soviet satellite carrier Intersputnik among several carriers (including AT&T) that have petitioned for such lines. While this will alleviate congestion somewhat, "In order to handle the volume, we really need 2,300 circuits," McGann said.



Networks promise gushers for Halliburton

BY JIM NASH
CW STAFF

ARLINGTON, Texas — The image of oil drillers has changed from that of crude-covered workers dancing around a gusher to sophisticated businesspeople behind teak desks murmuring into phones.

Those stereotypes have changed because the big profits in U.S. oil have swung from gritty production of the mineral to the more conceptual business of managing it through futures trading, transportation and distribution.

Computer networks are becoming essential to managing oil, which in turn makes management of networks critical. Firms such as Halliburton & Co., the global energy and engineering corporation, are moving over to networks after convincing themselves that effective management tools do exist.

Dell Holmes, lead analyst of customer technical services at Halliburton, said the company is in the midst of upgrading the existing large-scale IBM Systems Network Architecture (SNA) and limited bridged Ethernet network. About 90% of network traffic now is SNA, according to a company spokesman, who said Halliburton intends to tie the two network architectures closer together.

The upgraded U.S. network could become a model for a global network, linking mainframes, desktop systems and portable computers. Holmes is testing Network General Corp.'s Distributed Sniffer System as one way to minimize the number of employees who would have to monitor the proposed network.

"The whole concept of sitting in my office in Dallas looking at an Ethernet network in Houston is of fair budgetary concern to the company," he said. About half of Halliburton's operations center on oil exploration and field services.

Distributed Sniffer, based on Network General's Sniffer network analyzer, collects information such as average frame size, rate of network use and error totals. Information is passed from the servers to one or more central consoles.

"A large, geographically dispersed company needs to be able to troubleshoot its networks from centralized locations," said George McLawhon, Holmes' supervisor. "It cuts down on travel time and [system] downtime."

Currently, Holmes said, employees can exchange computer files, but only by loading them from their personal computers on an SNA network to two IBM 3090 model 600Js and one model 600E here. From there, other employees can download them. That scenario is becoming time-consuming and awkward, he said.

Step by step

Halliburton's first step is being taken in Texas. The firm is upgrading small, bridged Ethernet networks in Austin, Texas, Houston and Arlington to a routed wide-area network, Homes explained. If all goes well, all major sites in the continental U.S. will be connected with T1 lines and monitored by Distributed Sniffers by year's end, he said.

Maintenance considerations for the network are given as much weight as actual construction issues, Holmes said. "We have to test [Distributed Sniffer] all the way down to the nuts and bolts."

While he said he is satisfied with the performance of the servers and consoles, Holmes said he will hold final judgment until he makes his presentation to management.

Distributed Sniffer meets Halliburton's bottom-line requirement: that any monitoring and analyzing device support SNA, Transmission Control Protocol/Internet Protocol, IBM's Netbios, Digital Equipment's Decnet, Novell, Inc.'s Internet Packet Exchange and Xerox Corp.'s Network Systems protocols.

McLawhon said Halliburton is willing to take network management step-by-step. While Sniffer does not manage Simple Network Management Protocol-based devices, it does provide remote protocol analyzing.

The system's cost is something of a drawback, Holmes said. "A company as large as ours doesn't mind spending $10,000 on a device, but [one] for every network out there. . ." He said two routing hubs have been approved by management. Each site would get a Sniffer server. As other sites are approved, they will also get a server, Holmes explained.

Sniffer servers can cost as much as $10,995, consoles as much as $8,000. While the price is small compared with having employees monitor each network, portable Sniffers can cost up to $30,000.

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NEW PRODUCTS

Cabling

Sutton Designs, Inc. has developed Lansavers LAN Protectors for protecting local-area network equipment from power supply irregularities.

The Lansavers products connect directly to LAN cabling. Versions are available for BNC and RJ-45 LAN interface ports. The products do not affect peripheral performance, according to the firm.

The units cost $65 each.

Sutton Designs
215 N. Cayuga St.
Ithaca, N.Y. 14850
(607) 277-4301

Micro-to-micro

Norton-Lambert Corp. has developed Close-Up 4.0, a modem remote control software package that works under DOS and all modes of Microsoft Corp.'s Windows 3.0. Close-Up 4.0 also offers increased performance and requires less memory, the company reported.

Version 4.0 costs $245 for the controlling machine module and $195 per remote module.

Norton-Lambert
P.O. Box 4085
Santa Barbara, Calif. 93140
(805) 964-6767

Local-area networking hardware

Digital Products, Inc. recently announced the Printdirector Bronzeboard SI, designed for use with Hewlett-Packard Co.'s Laserjet IIISI.

The board allows up to 15 stand-alone users to share a single printer; it also supports connection with local-area networks via a print server.

The Bronzeboard SI with seven input ports costs $845. The cost of eight additional ports is $795.

Digital Products
108 Water St.
Watertown, Mass. 02172
(617) 924-1680

Wide-area networking software

Morning Star Technologies, Inc. has released asynchronous Point-to-Point Protocol for Sun Microsystems, Inc. workstations.

Point-to-Point Protocol is a transparent extension of Transmission Control Protocol/Internet Protocol, allowing communications between different local-area networks. The version of Point-to-Point Protocol for Sun workstations includes on-demand dialing, inactivity disconnect and packet-filtering features.

Licensing costs $795 per machine.

Morning Star Technologies
1760 Zollinger Road
Columbus, Ohio 43221
(614) 451-1883

Local-area networking software

Gateway Communications, Inc. has introduced a low-cost network operating system: Great OS, which offers distributed file sharing, electronic mail, network management and remote access support. It supports all Ethernet standards as well as Gateway Communications' Systems Network Architecture, X.25 and IPX communications products.

The product runs over the DOS operating system. It is priced at $495 for five users and $995 for 15 users.

Gateway Communications
2941 Alton Ave.
Irvine, Calif. 92714
(714) 553-1555

Brightwork Development, Inc. has announced enhancements for its LAN Automatic Inventory (LAI) software product.

LAI 2.0 audits the hardware and software components of personal computers and Apple Computer, Inc. Macintoshes on Novell, Inc. Netware local-area networks. The product builds data from the audit, including processor types, bus architectures and fixed and floppy drives identification, into a database. The new version adds the ability to identify software applications and revision numbers resident on each node's hard drive.

LAI 2.0 costs $695 per file server. It does not require any resident component on network nodes.

Brightwork Development
Jerral Center West
766 Shrewsbury Ave.
Tinton Falls, N.J. 07724
(908) 530-0440

Electronic mail

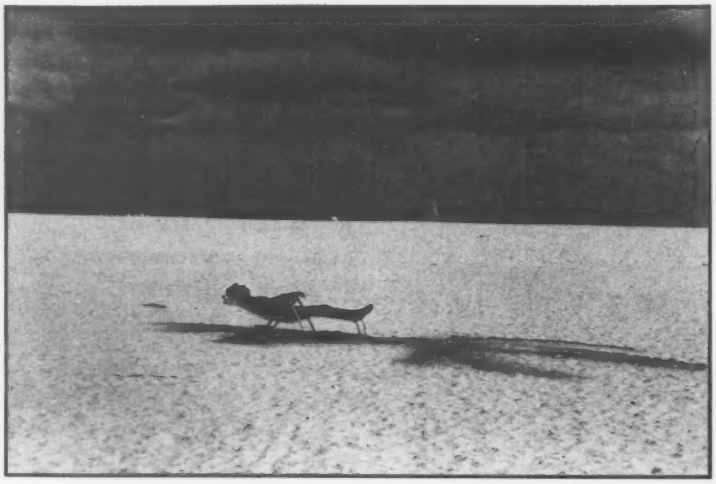
Retix has announced the Microsoft Mail Gateway to X.400 for Macintosh.

The gateway ($1,795) connects Apple Computer, Inc. Macintosh users running Microsoft Corp.'s electronic mail system to X.400 networks. It works together with the Retix Openserver 400 software product for local-area networks.

Retix has also announced the 4760, a local device that routes Transmission Control Protocol/Internet Protocol traffic while transparently bridging network traffic based on other protocols in large, multivendor networks.

The price is $4,250.

Retix
2644 30th St.
Santa Monica, Calif. 90405
(213) 399-2200



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MANAGER'S JOURNAL

EXECUTIVE TRACK

Norbert J. Kubilus has been named vice president and director of corporate information systems at Plymouth Meeting, Pa.-based **BCM Engineers, Inc.**

Kubilus will be responsible for managing IS throughout the firm and developing the IS organization. A 20-year IS veteran, Kubilus had been vice president of management services at Optimal Solutions, Inc. Before that, he held IS executive positions at Educational Testing Service, Inc. and National Data Corp. He was also a member of the graduate faculty at the New Jersey Institute of Technology.

.....

Richard G. Fleager was promoted to vice president of IS at **El Paso Natural Gas Co.**, an El Paso, Texas, subsidiary of Burlington Northern, Inc. The position had been vacant for about one year since former Senior Vice President John Craig left to become president and chief executive officer of Burlington Environmental, Inc., a former subsidiary of Burlington Northern.

Fleager, 40, had been director of IS support at El Paso Natural Gas. He is responsible for computer operations, applications development and applications support.

He joined the company in 1973 as a junior accountant in the controller department. He became director of gas settlement in 1984 and director of IS support in 1986.

.....

Susan F. Schwab has been promoted to vice president of information services at **Bentley College** in Waltham, Mass. She is responsible for academic and administrative computing and telecommunications systems.

Schwab joined Bentley in 1987 as director of administrative systems and played a lead role in converting its information systems to Digital Equipment Corp. VAX computers.

Previously, Schwab was director of IS at Harvard Medical School. Before that, she worked in IS at Massachusetts General Hospital in Boston.

IS must get a handle on bar coding

Business opportunities missed as management fails to take technology leadership role

BY MITCH BETTS
CW STAFF

In today's grocery stores, it seems everything that is not nailed down has a bar code slapped on it. Even coupons now have bar codes, allowing the cashier's computer to quickly verify that you really bought the economy size of Tide before it deducts 25 cents.

Bar codes are not just for groceries anymore. They are widely used to track the inventory in a variety of retail and manufacturing industries and have become a critical part of the way that firms such as Federal Express Corp. manage package deliveries.

Bar coding is a $2 billion business that is growing 20% per year, but experts say the technology is far from reaching its full potential. One reason is that many information systems departments have not embraced bar-code systems or taken a leadership role in making sure the technology is exploited companywide.

"There should be much more active involvement by the MIS group, which is really the group that should be spearheading these projects, not just invited to participate," says Bert Willoughby, a Pipersville, Pa., consultant specializing in automatic identification technology. "Bar code belongs in the MIS world," he declares.

Stuart Goldenberg

Some IS departments even seem hostile to bar-code systems, which are often initiated at the grass-roots level, because the systems do not adhere to corporate standards for hardware or software development and are outside the IS department's control, consultants say.

There are some shining examples of companies, such as Federal Express, that have given bar codes an honored spot in their corporatewide strategic plans. But for every Federal Express story there are dozens of companies at which operations managers have implemented bar-code systems as local solutions to local problems, according to Kevin R. Sharp, a consultant and technical editor for *ID Systems*, a user-oriented magazine based in Peterboro, N.H.

The result of the IS department's hands-off approach, experts agree, is that the penetration of bar-code technology in corporate America is very shallow — a mile wide and an inch deep. "If MIS were spearheading this, then you'd see a proliferation [of bar-code projects] throughout all the departments in the corporation because they'd be building their systems around automated data-collection technology," Willoughby says.

Bar-code labels and scanners

Continued on page 60

Maintaining staff knowledge in frugal times

BY J. A. SAVAGE
CW STAFF

It started with travel restrictions during the Persian Gulf war and dovetailed into the recession: Businesspeople are not going to as many seminars and conferences. With no sign of allayed budget restrictions, how does an information systems department keep up with current technology trends?

One way to compensate for the lack of travel money is to watch for conferences nearby. "We try to pick things close to home," said Al Hyland, director of worldwide systems at Polaroid Corp., based in Waltham, Mass. "Sooner or later, they get to the Boston area."

NU's Dixon *'begs and borrows' for seminar seats*

Polaroid, which has reduced its conference budget by 10% to 15% during the past three years, has found value in sending one designated attendee to a conference to take solid notes and collect and then summarize material. Hyland suggested that electronic mail is the best way to disseminate information, and the second best way is having that attendee conduct a presentation. "They can pick up slides and graphics, cut down on the sheer volume of material and add their own comments."

Midwestern firms do not usually have the luxury of waiting for conferences to come to them. 3M Corp. in St. Paul, Minn., frees up more travel money — primarily, for software technology — but for fewer employees.

"You can keep up with hardware reading magazines," said Kelley Kimball, an engineering designer at 3M. However, he said, the engineering division makes sure it attends software user group meetings no matter where they are held.

"We may not send the 20 or 30 people we used to, but we'll send three or four," Kimball said. Those designated will typically write up a trip report about what they learned at a conference and share it with co-workers.

If there are designated attendees, management and conference organizers encourage them to pick up extra videotapes and audiotapes to distribute back at the office.

Some companies, such as Northeast Utilities in Hartford, Conn., cannot even afford to send a designated attendee. "We've virtually eliminated all travel and training," said Tod Dixon, vice president of information resources. "I can bypass it for the next six months, but I'm in trouble if it goes into next year. Things change too fast in this industry."

To get around his severe circumstances, Dixon has "begged and borrowed" seats in neighboring corporations' technical seminars. He said he is also able to send people on day trips, but they cannot stay overnight.

Finally, exhibitors at conferences are getting more into the act. "They have to personally invite people they want to come," said Jim O'Rourke, senior vice president of sales and marketing at Bruno Blenheim, Inc., a conference organizer in Fort Lee, N.J.

According to organizers, most companies do not budget ahead for conferences. Instead, they treat attendance like a regular travel budget and allow spending on an ad hoc basis. Thus, conference attendance is subject to the vagaries of month-to-month or quarter-to-quarter cash flow. They suggest, if possible, making conferences part of the IS annual budget.

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IS bar coding

CONTINUED FROM PAGE 57

basically provide an accurate, fast way of filling in the fields of a computerized record or transaction. Bar codes can be used to track everything from legal and engineering documents to the company's microcomputers and laser printers:

- The Florida Department of Law Enforcement has installed a bar-code system in the state's six forensic laboratories to track criminal evidence — a cumbersome and unreliable task when done manually.
- GB Electrical, Inc., a Milwaukee-based supplier of electrical hardware, showed up at a recent trade show with an "on-line catalog" featuring thousands of product listings and associated bar codes. On-the-spot orders were transmitted by an electronic data interchange (EDI) network so "the order could be in the shipping department by the time the buyer leaves the show," IS Director Michael J. Krahn says.
- University Hospital of Cleveland has a bar-code system that saves nurses time in recording patient classifications. The hospital took the terms approved by the North American Nursing Diagnosis Association, such as "impaired physical mobility" and other conditions, and put them in bar-code format.

However, growth in white-collar applications has been very disappointing, despite the fact that bar-code systems typically have an investment payback time of 12 to 18 months, analysts say.

The technology can improve the accuracy and timeliness of the data that winds up in company information systems. Whereas manual data entry usually has one error per 300 entries, bar-code scanners have an error rate of one in every 3 million entries, improving data accuracy by a factor of 10,000, Willoughby notes.

Accuracy and timeliness were certainly the reasons why Scottsdale, Ariz.-based Blood Systems, Inc., the nation's second largest blood supplier, installed its bar-code system two years ago. The system tracks each bag of blood to check and double-check that it has been properly tested for the acquired immune deficiency syndrome virus and labeled with the correct blood type, says Don Henson, director of information resources. Also, each blood shipment to a hospital is accompanied by a bar-coded document that is returned to the blood bank to update inventory records and generate an invoice.

First look

Many IS managers are getting their first exposure to bar codes in the context of just-in-time inventory systems and EDI networks, which are enhanced by the real-time inventory-tracking capability of bar-code systems.

Moreover, some large retailers and manufacturers are requiring their suppliers to bar code their products — known as the "bar code or die" mandate — so the receiving dock can cross-check the bar-coded shipment with the EDI-delivered shipping documents.

Today, IS managers are at least being included on the project teams for bar-code systems simply because the systems must be integrated with the company's host computers, consultants say. One of the big decisions for the project team is whether to handle systems integration chores in-house or turn them over to an outside systems integrator.

Henson says that if he had to do it over again, he would turn to an outside integrator with lots of bar-code expertise "to make sure that we had covered all of the bases and that we had more flexibility for change and adaptation."

Keith Everett, director of bar-code in-

Behind the bar

The use of bar-code scanners by grocers and mass merchandisers has revolutionized the field of marketing research, according to Richard J. Fox, associate professor of marketing at the University of Georgia.

Marketing managers are now inundated with point-of-sale data as well as with the data tapes from market research companies that follow the purchasing habits of selected households. The targeted consumers, who previously had the tedious task of keeping a diary of their purchases, can now use a scanner to read the bar codes on their pantry shelves [CW, June 10].

But Fox says there is a price to pay for all of this detailed and timely information: data overload.

Many companies have yet to figure out how to make the best use of the huge amount of data they can obtain. "By the time they get one two-week period of data up and looked at, here comes another load," he says.

To avoid information paralysis, companies must be sure to establish some specific objectives about what they want to analyze. One of the most popular systems for making some sense of the multiple data sources, Fox says, is the decision support system from IBM's Metaphor Computer Systems unit in Mountain View, Calif.

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THE STRAIGHT-PAPER-PATH,

dustry research at Venture Development Corp. in Natick, Mass., says that about two-thirds of the users decide to tackle the integration job in-house because they feel it would be impossible for an outsider to understand the nitty-gritty of their business application. Often they end up writing their own software, although it may become mired in the IS department's applications backlog, he adds.

Whether they like it or not, IS managers will eventually need to add bar codes to their tool kits so they can meet corporate demands for real-time information management, consultants say. As Willoughby puts it: "You can't control what you can't see. Bar-code scanners are the eyes of contemporary management information systems."

Advice from the trenches

For IS departments about to launch a bar-code project, IS managers and consultants offer the following advice:

- Make sure the work flows are as efficient as possible before applying bar-code technology.
- Address the people issues. Involve the end users, such as the shop foreman, at the start of the development process because the system will fail if it makes their jobs more complicated instead of easier. The project will also fail if workers perceive it as a Big Brother system foisted on them.
- Pay attention to the details involved in printing bar-code labels, including the image quality, the label stock and even the adhesive. Test the labels on-site to make sure they do not fall off, come apart or smudge during rough handling.
- Program the system with enough flexibility so that different bar-code formats, devices and printers can be easily plugged into the application.

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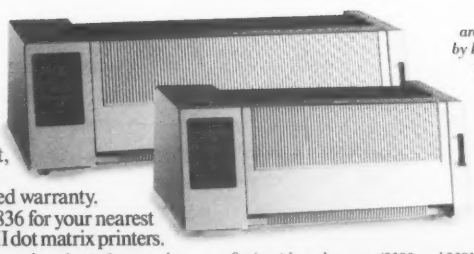

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Softworld. Vancouver, British Columbia, Sept. 22-25 — Contact: The Computer Software and Services Industry Association, Arlington, Va. (703) 522-5055.

Advanced Network Computing Forum. Boca Raton, Fla., Sept. 23-24 — Contact: Megan Senete, New Science Associates, Inc., Southport, Conn. (203) 259-1661.

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Association of Records Managers and Administrators (ARMA) 36th Annual Conference. Orlando, Fla., Sept. 23-26 — Contact: ARMA International, Prairie Village, Kan. (913) 341-3808.

Total Quality in Telecommunications. San Diego, Sept. 23-28 — Contact: Telecommunications Association, Covina, Calif. (818) 967-9411.

New York/New Jersey AIX User Group Meeting. New York, Sept. 24 — Contact: Lester Marcus, AIX User Group, Iselin, N.J. (908) 906-5660.

Showcase VI Conference. Advances in Applications Development. St. Louis, Sept. 24-25 — Contact: Washington University, St. Louis, Mo. (314) 889-5380.

Engineering Documentation Management Systems User Forum '91. Cincinnati, Sept. 24-26 — Contact: Carol McCalmont, Kalthoff Group, Cincinnati, Ohio (513) 871-7804.

Vitalink User Exchange Annual Meeting. San Francisco, Sept. 24-27 — Contact: Marilyn Callaghan, Vitalink Communications Corp., Fremont, Calif. (415) 794-1100.

Human Resource Systems Professionals (HRSP) Annual Conference. Boston, Sept. 25 — Contact: Leonard Courchaine, HRSP, Portland, Maine (207) 871-6222.

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More to offer

IS professionals say their companies aren't making full use of their talents, and if they leave, it will most likely be for opportunity, not money

BY ALAN J. RYAN
CW STAFF

Information systems professionals say their organizations are working them hard, but they aren't being used to best advantage.

Computerworld recently polled 851 senior and middle IS managers and professionals for its fifth annual Job Satisfaction Survey. This year, the survey was expanded to include a number of questions dealing with job performance and how it relates to job satisfaction. Exploration of that connection produced some very interesting responses.

Consider, for example, that although six out of 10 respondents said stress levels in their organizations are increasing, only a small fraction said they felt their departments were performing up to full potential, and two-thirds of the sample said they didn't believe they were working up to their personal potential.

In other words, although they may be working under more pressure, many IS professionals are convinced they aren't doing the kind of work they could and should be doing.

These are not the complaints of frustrated top executives dealing with laggard staffs. Although managers expressed some discontent with departmental performance, they were actually milder in their criticism than nonmanagerial professionals. In rating their department's performance on a scale of 1 to 5, with 5 indicating optimal performance, 64% of the top IS executives surveyed rated their department's performance level at 4. Only 47% of middle managers and just 40% of IS professionals gave their departments a rating of 4.

Similarly, the feeling of personal underutilization was strongest among nonmanagers, with 70% saying they were not working to their fullest potential.

Rajeev Bajaj, a senior programmer analyst at Maritz, Inc. in St. Louis, expresses some of the frustration behind the survey numbers.

"Given the knowledge I was exposed to in school, working in IS has been somewhat of a comedown," Bajaj says. There is often a "resistance to change toward more productive ways, toward more productive tools to do the job better and faster or in a more structured way.

"That means that while we have the potential to change things . . . we are often not able to or encouraged to," Bajaj adds.

Slashed budgets, outdated tools and departmental cutbacks can all add to the frustration. At Stryker Corp. in Kalamazoo, Mich., corporate MIS director David Huisjen says that sometimes, IS workers feel they are not working to their fullest potential because they either don't have the tools they need or because there is a communication deficiency between the worker level and the long-range planners for the companies.

Although three out of four people surveyed agreed that there is a strong tie between job satisfaction and job performance, the factors that were cited as most important for each were quite different.

For instance, IS middle managers said they see the quality of work tools (48%) and relationship with managers (47%) as having a strong positive impact on performance within an IS department but cited salary (57%), relationship with manager (55%) and opportunity for advancement (53%) as factors that impact job satisfaction.

Meanwhile, IS professionals said availability of training (53%) and quality of work tools (60%) were the strongest factors affecting job performance, while job satisfaction was most apt to be impacted by salary (61%), opportunity for advancement (57%), relationship with manager (57%), flexible work hours (52%) and feedback from supervisor (48%).

Interestingly, survey respondents at all title levels agreed that monetary recognition such as bonuses and salary increases, although important to worker satisfaction, have only a somewhat positive impact on job performance.

Karl Chambers, a programmer at Chase Manhattan Bank in Garden City, N.Y., is a strong believer in recognition as a reward.

"If someone did a very good job on a project, maybe they could take him out to dinner to recognize a job well done," he says. "And the recognition doesn't necessarily have to be financial," he adds. "Even printing something in the company newsletter" would work.

Sometimes, the best motivator is simply to express appreciation for your staff through gestures that show flexibility and awareness of their hard work, says H. Jay Stephens, manager of computer technology support at the Davis County Schools technology support organization in Farmington, Utah.

"One of the best things I find is to be a little bit lax in the summertime," Stephens says. Occasionally, he says, he and his 12-member staff will head out for a morning of recreation when work is slow. "Just nine holes of golf and then back to work."

Recreation breaks may be particularly appreciated this year, since more IS workers say they are feeling the effects of stress.

Middle managers seem to be hardest hit. Sixty-one percent of them reported an increase in stress within their IS departments since last year, compared with 49% of senior executives and 56% of IS professionals.

Why they fly

While senior IS executives say the most common reason IS workers leave their companies is better pay elsewhere, middle managers and IS professionals say opportunities for advancement is the top reason

Top reasons for leaving (in order of importance)

Senior executives
- Better pay
- Better opportunities for advancement
- Less pressure and stress

IS middle management & IS professionals
- Better opportunities for advancement
- Better pay
- Less pressure and stress

CW Chart: Michael Siggins

"The more you give people in this business, the more they want," Stephens says. "That's what causes your stress. They want it more and faster." The problem with stress, he adds, is that there are no simple ways to alleviate it in the IS field. "If I knew how, I would be putting it to good use," he says.

Even though the number of top

Room for improvement

Only 4% of IS workers think their departments are working to full potential; three times that number see performance as below par

IS department performance level rating

Least potential				Fullest potential
1	2	3	4	5
1%	11%	40%	44%	4%

Percent of respondents/Base: 825

CW Chart: Michael Siggins

Gripes aside. . .

They've got their complaints about their companies and the pressure of working in the IS field, but nearly two-thirds of IS workers are very satisfied with their chosen career

Satisfaction with IS as a career

Very dissatisfied				Very satisfied
1	2	3	4	5
0%	4%	4%	28%	64%

Percent of respondents/Base: 833

CW Chart: Michael Siggins

Responsibilities and mobility

Senior executive
- Typically holds title chief information officer, vice president of IS, manager of IS services.
- Has 26 direct reports.
- Works in 105-member IS department.
- Has worked for current employer for 10 years.
- Has worked in IS field for 16 years.
- 59% say they are not actively looking for a new job, but if the right opportunity presented itself, they would investigate it further.

IS middle management
- Typically holds title director of IS or technical manager (in various specialties).
- Has 10 direct reports.
- Works in 126-member IS department.
- Has worked for current employer for nine years.
- Has worked in IS field for 14 years.
- 60% say they are not actively looking for a new job, but if the right opportunity presented itself, they would investigate it further.

IS professional
- Typically holds title programmer/analyst or systems developer.
- Has 2 direct reports.
- Works in 173-member IS department.
- Has worked for current employer for six years.
- Has worked in IS field for eight years.
- 57% say they are not actively looking for a new job, but if the right opportunity presented itself, they would investigate it further.

Base: 844

CW Chart: Janell Genovese

executives reporting increased stress is somewhat lower than that of either middle managers or IS professionals, they are definitely feeling some additional pressure.

One top-level IS manager, a vice president of IS at a marine-related company, says she is under enormous pressure because her department geared up systems to accommodate sales growth that never happened. "We can't just rip out hardware we put in place," she laments. "We may be overconfigured now, but we had to gear up for what was supposed to happen. We kind of got beat up on that one."

Other often-mentioned stress inducers include reductions in staff size (47%), increased work load (82%), budgetary constraints (53%) and increasing demands on IS from business units (51%).

Although considerably farther down on the scale in terms of direct mentions, it is worth noting that the perceived need for IS to focus on business issues was cited as a stress factor by 14% of senior IS executives and 16% of middle managers.

While the reason why this is perceived as stressful is not clear from the survey, one respondent did indicate in a subsequent conversation that her problem in this regard had to do with exclusion from business planning. "Where I actually think my department could have some significant input about making new ventures viable through technology, we don't know about it early on and don't have input," she says.

"They pat your hand and they will say, 'We'll tell you when you need to know.' That's very frustrating," she adds.

Perhaps in part because of the added pressures and possibly because of those kinds of frustrations, more than half of the survey respondents said they were not averse to investigating other job opportunities that might present themselves. And nearly one out of three IS professional-level workers said the job satisfaction in their company's IS department is declining.

Dick Bodine, an IS director-level worker in Logan, Utah, says that in the electronic components industry, the impact of the recession has been strong, causing his IS department to cut back jobs. That's frustrating, he says, because while there are IS tools that could help the company along, there simply aren't enough bodies left to make that happen.

In addition, his training budget has been affected, Bodine adds. "I'm limited by budgetary constraints and backlog requirements."

Although many IS professionals said they might consider leaving their present jobs for the right offer, few said they are likely to seriously entertain the idea of changing professions. Ninety-two percent said they are satisfied with their decision to pursue a career in IS.

Working in IS is certainly challenging, but it is a challenge that most IS workers welcome, according to Stryker's Huisjen. "We are all masochistic in this business. Stress comes with the territory." •

Where levels meet

Although IS executives and professionals don't always agree on what satisfies a staff, they do agree on what makes one perform

Top satisfaction factors

What IS professionals feel influences satisfaction of an IS staff

- Salary
- Opportunities for advancement
- Flexible work hours

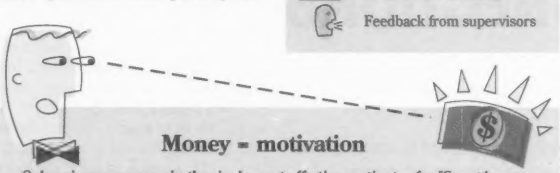
What senior executives feel influences satisfaction of an IS staff

- Salary
- Relationship with manager
- Feedback from supervisors

Top performance factors

IS professionals and executives agree that the top factors influencing an IS staff's performance are the following:

- Quality of work tools
- Availability of training
- Feedback from supervisors



Money = motivation

Salary increases remain the single most effective motivator for IS employees at all levels. Senior executives, however, do favor personal congratulations over salary increases or bonuses as a way to reward hard work and exemplary job performance.

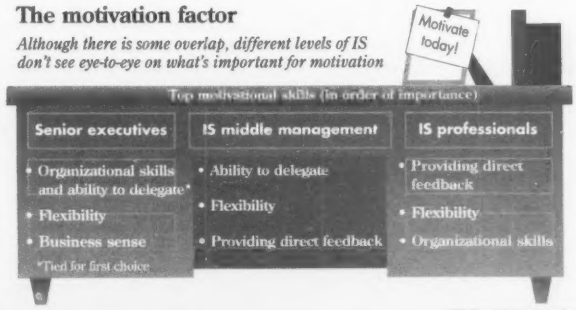
Top 3 rewards

Senior executives	Middle management	IS professionals
Personal congratulations	Salary increases	Salary increases
Salary increases	Promotions	Promotions
Bonuses	Bonuses	Personal congratulations

CW Chart: Janell Genovese

The motivation factor

Although there is some overlap, different levels of IS don't see eye-to-eye on what's important for motivation



CW Chart: Michael Siggins

Satisfaction does impact performance

IS executives, middle management and professionals agree that when workers enjoy their work, they are more likely to work better . . .

"The more satisfied an employee is with his job, the better his performance."

Strongly agree	Somewhat agree	No opinion	Somewhat disagree
76%	22%	1%	1%

But consensus among the three levels begins to break down when it comes to assessing trends in job satsfaction . . .

"Describe the level of job satisfaction in your company's IS department."

	Improving	Stable	Declining	Base:
Senior executive	41%	54%	5%	74
IS middle management	23%	53%	24%	298
IS professional	14%	55%	31%	449

Percent of respondents

Top executives are, by far, the most upbeat when describing department performance.

"How would you describe the level of job performance in your company's IS department?"

	Improving	Stable	Declining	Base:
Senior executive	50%	46%	4%	74
IS middle management	38%	51%	11%	297
IS professional	31%	54%	15%	449

Percent of respondents

Senior IS executives are also much more likely to say they are "very satisfied with their current jobs" and that they are "working to their fullest potential."

"Overall, how satisfied are you with your current job?"

	Very satisfied	Somewhat satisfied	Neutral	Somewhat dissatisfied	Very dissatisfied	Base:
Senior executive	38%	43%	12%	7%	—	75
IS middle management	27%	47%	7%	16%	3%	299
IS professional	22%	47%	10%	15%	6%	456

Percent of respondents

"Do you believe you are working up to your fullest potential in your current job?"

	Yes	No	Base:
Senior executive	47%	53%	74
IS middle management	34%	64%	298
IS professional	30%	70%	453

Percent of respondents

COMMENTARY

M. Arthur Gillis

Technology is not the answer

I'm not against progress or improvements in technology, but some parts of the information systems business have matured and work well enough to leave them alone. It isn't necessary, for example, to go out and buy IBM's newest mainframe just because they announced it.

Although technical excellence is a must in our business, I believe we need excellence in judgment and common sense. Before we get a chance to wear out technology it seems that we are eager to replace it. Smart users of computer technology will know how to balance legitimate need with supply in order to get the job done and not go overboard.

And here comes the shocker: Some functions just don't need to be automated. I'm reminded of that when I go into a small retail store that once was quick to ring up my sale but has since automated. As a result, I get a chance to read the tabloids while the system records all kinds of information about the fact that I purchased some stationery. When the main mission is delayed to favor the system or the owner of the system, then I believe we in IS have failed.

Technology companies are so desperate to keep up an uninterrupted pattern of growth that they seem to be forcing technology on functions that don't really need it. I was never convinced that every home needed a computer, and today I'm even more convinced that the only reason to have one at home is because it is an occasional annex of the workplace.

I also don't think there's a heck of a lot wrong with that innocent little piece of paper called the check. While technologists have been trying to get rid of it for the last two decades, its volume has increased consistently every year. The only new thing I need from my bank is a million-dollar line of credit. I've got enough technology.

Although I am an avid user of fax when it is justified, I do not appreciate it as a direct sales medium or as a universal replacement of the postal service communications. I believe that a lot of messages get to their destinations in seconds only to become stale in someone's in-basket because the receiver is out of town.

I'm no prophet, but I see some major developments occurring in the world. A key phrase that I see in future developments is "combine to conquer." Banks are merging. IBM and Apple are partnering. European countries are organizing into a community. AT&T and NCR are welding together two dependent-on-each-other technologies, communications and computers. Strong airlines are taking over weak ones.

The results of consolidation will be positive, but not for everyone. Without a doubt we'll see the elimination of millions of workers who perform processing and middle management functions, but at the same time the resulting larger organizations will create job opportunities for giant executives who can build and manage global systems.

The problem is, I'm not so sure these executives are available, and without them, we run the risk of catastrophic damage if the systems fail. Convincing big people that there is risk in "too big" is not a challenge I wish to accept because arrogance is harder to penetrate than the shrink-wrap of a Delta Airlines snack.

Last year I worked on an assignment that involved Citicorp. Its favorite expression and symbol of cockiness as other banks were bellying up was, "too big to fail." But the real test is not total failure. In some cases, just poor performance is bad enough to wipe out people and organizations. I think Citicorp's and IBM's chairmen, just to name a couple, are beginning to understand that very well now.

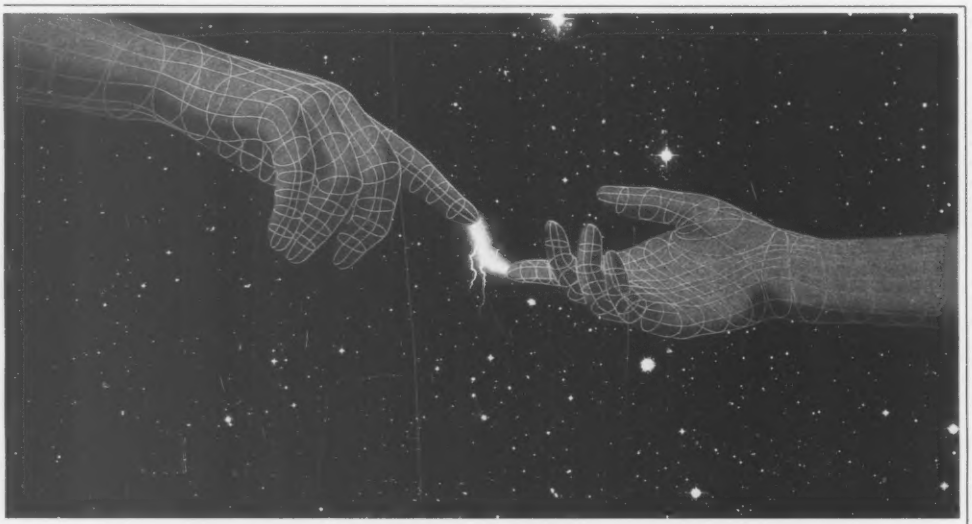
In my building there are lawyers, engineers and consultants who frequently knock on my door in desperation. "Can you help me with my system?" they fume. They have a job to do, and the system is blocking them for a variety of reasons.

Then I pick up my trade journals and almost everything I read involves new technologies and leading-edge products. It's like telling a user who can't produce an aged trial balance that his computer uses the most advanced chip technology. Will that make him feel any better? As much as vendors like to brag about solutions, the industry is still product-oriented. What's worse, many corporate IS managers are just as product-oriented.

Simply stated, I believe we've done a great job of producing superb technology. What we haven't done well is to place it at the right levels and make it work at all levels of user activity. Some of it is too complex for ordinary workers, and some of it is too threatening to executives. And some of it changes so fast that IS organizations seem to be engaged more in upgrading technology than processing user applications.

Enough technology already. Let's get some work done.

Gillis is president of Computer-Based Solutions, Inc., a New Orleans-based IS management consultancy. This column is excerpted from his book *Sorry, Our Computers Are Down* to be published later this year by Vantage Press, Inc.



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Outsourcing without guilt

Successful outsourcing involves three simple steps: segmenting, analyzing and partnering

BY PAUL CLERMONT

Nothing is sacred about information technology anymore. Tough times and cutthroat competition are causing many companies to examine spending across the board — including in information systems areas. Organizations are willing to make radical changes to stay competitive, so it's no surprise that many are scrutinizing the outsourcing of information technology management activities.

The impetus to analyze outsourcing options often comes from top management. Senior business managers want to know why information technology activities are being performed in-house when outside organizations might be able to handle them more economically.

To senior executives, outsourcing sounds like a blessing. They view internal information technology organizations — justifiably or not — as spending too much on things that take too long to get done and, even then, don't seem to work very well.

These executives have no doubt heard of outsourcing's generic benefits: economy, service quality, predictable cost and quality, flexibility, making fixed costs variable and freeing up human and financial capital (see story page 68). However, they may be less aware that these benefits do not necessarily accrue in equal measure for every organization. Some companies will successfully capture major benefits from outsourcing, while others will not. Still others will talk themselves out of even trying and will leave the potential benefits on the table.

A trio of strengths

For companies to derive value from outsourcing, they need to do three things well:

- Segment the range of information technology activities into pieces that can potentially be outsourced.
- Use sound business-based analysis to identify those segments it makes the most sense to outsource.
- Treat the outsourcing relationship as a partnership, using the procurement process as a test of the vendor/user working relationship.

Clermont is a principal at Northeast Consulting Resources, Inc. in Boston. He consults on IS strategic planning and its link to business.

By segmenting a company's information technology activities, it is easier to decide which pieces are ripe for outsourcing.

Information technology activities can be segmented along technology-based lines such as transaction processing, desktop computing, network management and so on. In these cases, the outsourcing decision is primarily focused on processing — that is, whether the company wants to own and operate mainframes, voice networks and other technologies.

Information technology can also be further segmented according to the area of the business being served. For example, an airline may use superficially similar on-line transaction processing systems for its reservations and its accounts payable, but the appropriateness of outsourcing each of those activities is vastly different.

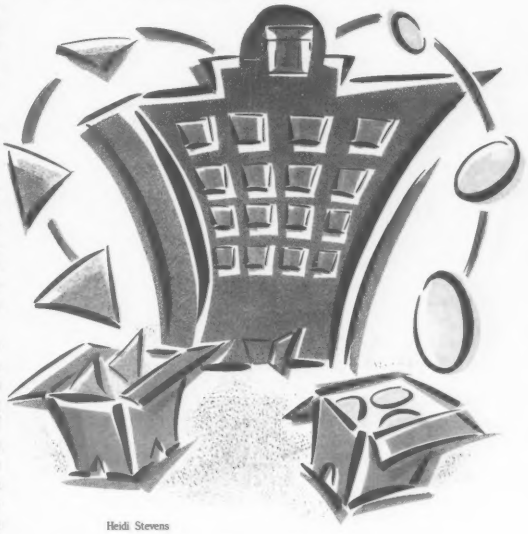
Outsourcing does not have to be an all-or-nothing proposition to be worthwhile. Companies that have rejected outsourcing may have made the mistake of looking at their information technology as a monolith. These companies might have seen the value of farming out some activities, but when they lumped those outsourceable pieces together with others that were deemed impractical to outsource, they concluded it made no sense to handle the project out of house.

Segmenting is important because outsourcing has never been applied to the whole enchilada. Even outsourcing pioneers such as Eastman Kodak Co. have retained considerable information activity in-house. And General Motors Corp. is again conducting some information technology activity in-house rather than through its systems integrator subsidiary, Electronic Data Systems Corp.

By separating technology activities, companies can make sure they match an outsourcer with the appropriate job. In that way, they'll get the skills and knowledge of a specialist for each area they want to outsource. Segmentation gives companies a real base from which to make an outsourcing decision.

Once you've segmented information technology activities into manageable pieces, you can decide, through a business analysis, which of those pieces (if any) should be outsourced.

One area companies will not want to abdicate to an outside organization is the executive management role in technology direction setting. Such a strategic task is best kept in-house.



Heidi Stevens

Outsourcing segments makes sense under the following business conditions:

- **OUTSOURCING MAKES SENSE WHEN** there is little opportunity for the company to distinguish itself competitively through the quality of its information technology processing operations. The competitive value may instead lie in applications and database operations.

Kodak focused its initial outsourcing effort on operations: mainframe processing, telecommunications and personal computer

Continued on page 68

- **Situations in which outsourcing makes sense**
- **The reward/penalty matrix**
- **Benefits revealed**

Continued from page 67

support. Application development and support both stayed in-house.

• **OUTSOURCING MAKES SENSE WHEN** there is limited opportunity for the company to distinguish itself competitively through the quality of its applications. "Commodity" applications such as credit card processing and payroll are classic examples. Automatic Data Processing, Inc. has built a successful business in processing payroll using its proprietary application.

These examples are likely candidates for having their application development and support as well as their hardware platform outsourced. This frees up resources for IS activities with a larger potential payoff — for example, customer service or manufacturing planning systems.

Too facile a business analysis in this case could be dangerous, however. Speed-based competition has given new importance to such areas as logistics and distribution, even though these activities were considered strategically neutral only a few years ago.

• **OUTSOURCING MAKES SENSE WHEN** the predictability of uninterrupted information technology service is not of great importance. When predictability is paramount, the extraordinary sense of urgency is not fully communicable to a financially independent outsider. Airline reservations and catalog shopping systems come to mind, as do some of the high-value transactions that financial institutions often process on fault-tolerant computers.

• **OUTSOURCING MAKES SENSE WHEN** it does not strip the company of critical technical know-how that is key to future IS innovation.

One example is computer-integrated manufacturing. Today's scheduling applications and shop-control applications are almost commodities, so it is not critical for most companies to maintain a pool of skilled people to build such applications.

However, systems that integrate these applications with robots and flexible machining centers are not only far from being commodities, but they are also potential competitive weapons. Any company fortunate enough to have such skills in-house should think hard before letting them go in the interest of short-term economy.

• **OUTSOURCING MAKES SENSE WHEN** existing information technology capabilities are limited and ineffective. Why commit the time, money and management attention to internal IS changes when the other evaluation factors mentioned above indicate you should outsource? On the other hand, if information technology is well-managed and productive, there may not be much immediate financial value for a vendor to add.

This list needs refinement and tailoring for each individual organization. Regardless, the overall theme here is business linkage. Without a sound business impetus, there may be little reason to devote scarce resources to providing certain information technology activities internally. It makes little sense to outsource when your own high-quality performance can make a competitive difference.

Create the partnership

With the business analysis done and outsourceable information technology activities identified, companies need to put related outsourceable segments together in packages to which vendors can respond. These packages should be reasonably self-contained.

Buyers then need to evaluate vendors' bids according to a number of dimensions. Technical competence to deliver should be the basis on which to start negotiations; the real challenge is to evaluate the softer partnership aspects of the deal.

One such "soft" criteria is that the vendor must have a feel for the customer's business and exhibit appropriate consulting and people skills when dealing with the customer's staff.

Another issue is the buyer's understanding of a vendor's pricing and how that compares with internal costs. An outsourcing vendor will quote his full cost plus profit. This will exceed the internal cost of providing information technology only in theory; in practice, it usually will not because the vendor applies the disciplines of line management to the customer's staff activity.

If the quotation is a whole lot more than the internal cost, it may very well be too high. But it may be high because of an incomplete analysis of internal costs. Few companies fully identify their spending on internal information technology beyond what they need to create budgets for the dedicated IS departments.

Before consummating a deal, companies need to analyze whether the vendor brings a clear advantage to the table. This means understanding the cost/quality trade-offs. Can you live with five-second response time during peak hours? Is next-day repair of PCs in remote offices OK? These are valuable questions to answer whether or not you're considering outsourcing; outsourcing deals just make the cost of higher service levels far more explicit and visible.

A vendor's promised service levels must be measurable, and there needs to be a clear basis for determining when the intent, rather than just the letter, of the agreement has been met. The basic ideas of statistical quality control are helpful here because they focus on overall performance levels as well as on defects.

For example, in dealing with on-line response time, occasional responses of more than five seconds are of much less concern if the average is holding at three seconds. IS should be concerned only if the average begins to steadily creep upward.

Finally, the cultures must be compatible enough to let both parties feel good about living together for the next few years. To create the necessary comfort level requires a joint effort of the vendor and client staff involved in the outsourcing deal. Good vendors will anticipate questions and provide good answers.

Few organizations have the luxury of ignoring the outsourcing option in today's cost- and service-conscious business environment. Companies will still come to a wide variety of conclusions about how much of the option they should pick up.

The important point is to arrive at answers through a business-driven process. Doing so is beneficial for everyone, including outsourcing vendors that will significantly aid their cause by helping potential clients perform a sound analysis.

From the vendor's viewpoint, a customer who buys less than the possible maximum and understands just why he bought it will be a good multiyear partner. From the customer's viewpoint, a vendor that understands and contributes to the decision process will be a good partner.

Without a partnership being based on sound business thinking, outsourcing will fail — sometimes spectacularly but more often, quietly. •

Rewards & penalties

The term outsourcing does not relate only to going to an outside vendor. It can also encompass the interplay between decentralized and centralized IS departments.

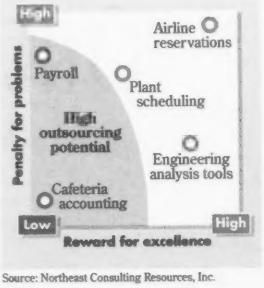
IS departments in business units often outsource information technology activities, such as purchasing software packages, to corporate IS. One way of looking at whether and what to outsource is to use a reward/penalty matrix.

This matrix has been used to map a wide variety of applications, databases and hardware platforms relative to one another as a way of allocating responsibility rationally among corporate business units.

Activities with low reward for excellence are, in general, better candidates for outsourcing than those with a high reward, but if the penalty for problems is at the maximum, outsourcing may be too risky.

The outsource choice

This reward/penalty matrix shows that those activities with low reward for excellence and low penalty for problems are good candidates for outsourcing



Source: Northeast Consulting Resources, Inc.

What outsourcing buys you

Here's why many companies choose the outsourcing option:

• **Economy:** Scale and specialization can enable vendors to deliver the same value for less money than the cost of maintaining an internal organization. For example, IBM and Electronic Data Systems Corp. claim that their experience and economies of scale can reduce a client's information technology costs by 20% to 40%.

• **Service quality:** Companies often have more effective and more easily exercised leverage over vendors than over their own employees.

• **Predictability:** A fixed-price contract with service-level guarantees eliminates a lot of uncertainty.

• **Flexibility:** Business growth can be accommodated without having to make quantum changes in the IS infrastructure.

• **Making fixed costs variable:** Some agreements, such as running payroll, are based on price per unit of work done.

• **Freeing up human capital:** Scarce and costly talent can be refocused on higher value activity than managing and operating a technology factory.

• **Freeing up financial capital:** Some agreements include the sale for cash of technology capital assets to the vendor.

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CD-ROM on the rise

▶ The **compact disc/read-only memory** (CD-ROM) market is booming, according to The Optical Publishing Association: It bounded upward more than 100% in each of the three past years and will vault from last year's $1.6 billion overall worth to $6 billion next year. Such rosy figures could be part of the reason why Scotts Valley, Calif.-based CD-ROM pioneer **Meridian Data, Inc.** last week received a $2.5 million third round of venture capital from a group of five institutional investors. The funds will finance a new generation of CD-ROM products aimed at making the technology accessible and affordable to the average user.

Coming subtractions

▶ A long-term plan to improve profit margins by restructuring worldwide manufacturing operations will cost **National Semiconductor Corp.** some $149.3 million in its current first quarter — a charge that is likely to knock the firm below analysts' expectations, the firm warned. The reshaping will include the consolidation of less productive plant capacity and the enhancement of the more productive operations.

Going public

▶ **U.S. Robotics, Inc.** plans to kick off the fall season as a public company. In an initial public offering registration filed with the Securities and Exchange Commission late last month, the Skokie, Ill.-based communications products maker proposed to offer 2.2 million shares, with selling stockholders offering 1.4 million. Prices anticipated for the initial public offering range between $11 and $13 per share.

Crime story

▶ Bad news for criminals and good news for post-office walls: Sunnyvale, Calif.-based electronic fingerprint scanning systems vendor **Identix, Inc.** signed a letter of intent to acquire **Imageering Optical Disk Systems**, a Memphis supplier of electronic mug shot systems. The firms plan to integrate their technologies into a criminal identification processing system that will let law enforcement agencies nationwide electronically capture and share fingerprints, photos and criminal histories.

I-Net soars by capturing fledgling niches

BY ELISABETH HORWITT
CW STAFF

BETHESDA, Md. — It's like a story out of Horatio Alger.

In 1985, Kavelle Bajaj, with a bachelor's degree in home economics, a few computer science courses under her belt and a personal computer in her basement, started a systems integration company. With luck and pluck she got her first government contract — a $130,000 office automation systems integration project for the Federal Railroad Administration — primarily because almost everyone else said it could not be done.

The agency wanted to "replace their word processors with PCs, retrain the entire staff and [use] off-the-shelf software," Bajaj said. "It was a new field then; people felt they couldn't buy office equipment under a service contract. We said, 'Let us be your integrator. We'll take the headache, the finger-pointing, and if it doesn't work, it will be our responsibility."

The job turned into an $800,000, four-year contract for I-Net, Inc., Bajaj said. It also provided the all-important first reference that brought in a growing spate of government work.

I-Net's rapid growth since then has stemmed from several factors. First, Bajaj seems to have a knack for identifying emerging systems integration niches not yet dominated by major players such as Electronic Data Systems Corp. and Computer Sciences Corp.

In fact, I-Net got into systems integration when it was the "new buzzword," Bajaj said. "Now everyone is in there, but the field is still evolving and we always keep ahead." The company focused on telecommunications systems integration early on, became one of the early local-area network integrators and, more recently, diversified into optical-disc conversion, computer-aided software engineering and facilities management.

Kavelle Bajaj, president

I-NET

Headquarters: Bethesda, Md.

Employees: Approximately 500

Year revenue: $30 million

Key services: LAN management, facilities management, network management, optical disc integration, telecommunications systems integration.

Key customers: Department of Health and Human Services, Department of Transportation and Environmental Protection Agency.

CW Chart: Janell Genovese

Bajaj's second secret of success has been the ability to attract highly qualified and experienced people to head her new businesses.

"I-Net is getting a lot of technical talent under their umbrella," said J. P. Richard, a principal consultant at Input, Inc. One of the firm's chief attractions to high-powered people, according to Richard, is Bajaj's apparent willingness to give them the time, money and space to develop their own businesses with minimal interference from management.

For example, when I-Net's Electronic Information Systems Unit got into optical-disc integration, it was able to snag William Hooton, who oversaw such conversion at the National Archives and Records Administration and now chairs I-Net's Digital Imaging Application Group. "You get a lot of latitude for creativity here," Hooton said. After years of protocol, such latitude holds major appeal, he said.

Perhaps Bajaj's biggest hiring catch was her husband, Ken S. Bajaj, who became I-Net's executive vice president about three years ago. An EDS executive who managed the implementation of T-400, a major truck factory automation program for General Motors Corp., Ken Bajaj left EDS to become part of Perot Systems Corp. Six months later, he joined I-Net.

"Hiring Ken away from Perot was a coup that gave people we were trying to hire confidence that we are here to stay," Bajaj said. "We are complementary: He has the operations and marketing skills."

While emphasizing that he joined I-Net to "help out," taking a "major pay cut" in the process, Ken Bajaj fully credits his wife as "one hell of a smart entrepreneur. We are building a new EDS," he added, "with the same feisty atmosphere that made the old EDS such a special place to work."

Several I-Net customers noted the firm's willingness to work closely with them and its strong emphasis on quality assurance. This reputation has built I-Net's business both by retaining early clients and by winning new ones through referrals.

"I think all of our customers are still with us," Bajaj said.

One such satisfied customer is the U.S. Department of Defense. I-Net "really got involved with the Pentagon by straightening out miles and miles of wire," said Col. David Breese, director of air staff systems, 7th communications group. "They did good work, and they were able to hire the right people," particularly project leaders with prior military experience who were "conscientious and understood our needs," he added.

I-Net's attention to seemingly small details impressed Breese, he said. "Just knowing

Continued on page 75

Lifting of some controls eases computer export

BY GARY H. ANTHES
CW STAFF

WASHINGTON, D.C. — As of last week, U.S. computer makers should see less red tape in export operations as new export controls, agreed on last May by the U.S. Department of Commerce and 16 other nations' governments, kick in.

The Commerce Department said a new and smaller list of controlled items will free nearly all personal computers, workstations and minicomputers for license-free export.

The new regulations also decontrol all dynamic random-access memories and allow Soviet purchases of U.S. telecommunications equipment equivalent to the state of the art in the U.S. in the early 1980s. However, advanced fiber-optic communications products may not go to the Soviet Union.

The greatly shrunken list of controlled items is in keeping with the Bush administration's desire to "build higher fences around fewer items." The control list now contains only those items "essential to maintaining the West's existing lead over Soviet military systems," and it will reduce computer export license applications by 70%, the Commerce Department said.

"The new core list . . . eliminates controls that have been made obsolete by a reduction in the Soviet military threat and the rapid diffusion of worldwide technologies," said Joan M. McEntee, acting undersecretary for export administration.

The computer industry had long fought many of the export controls, arguing that they constrained overseas sales of U.S. goods that are freely available from other countries anyway. While they welcomed the latest relaxation of controls, computer companies and trade associations said decontrol has not gone far enough.

Not all recent actions by the government have made life easier for exporters. While the Commerce Department has moved to raise the technological ceiling that governs which products can be freely sent abroad, it is simultaneously toughening rules banning sales of products to overseas customers and countries likely to use them for terrorism or production of chemical, biological or nuclear weapons.

The test of what is an exportable item is shifting to focus on end use rather than technology level, said Gary Wilmarth, director of trade services at Day, Barry & Howard, a Hartford, Conn.-based law firm. "It's gotten to the point where computer companies have to look at an item's end use, not its level of sophistication or where it's going to be sold," he said. "There's now a large degree of self-determination by U.S. industry on whether you can export something. The hidden element is knowing who that end user is."

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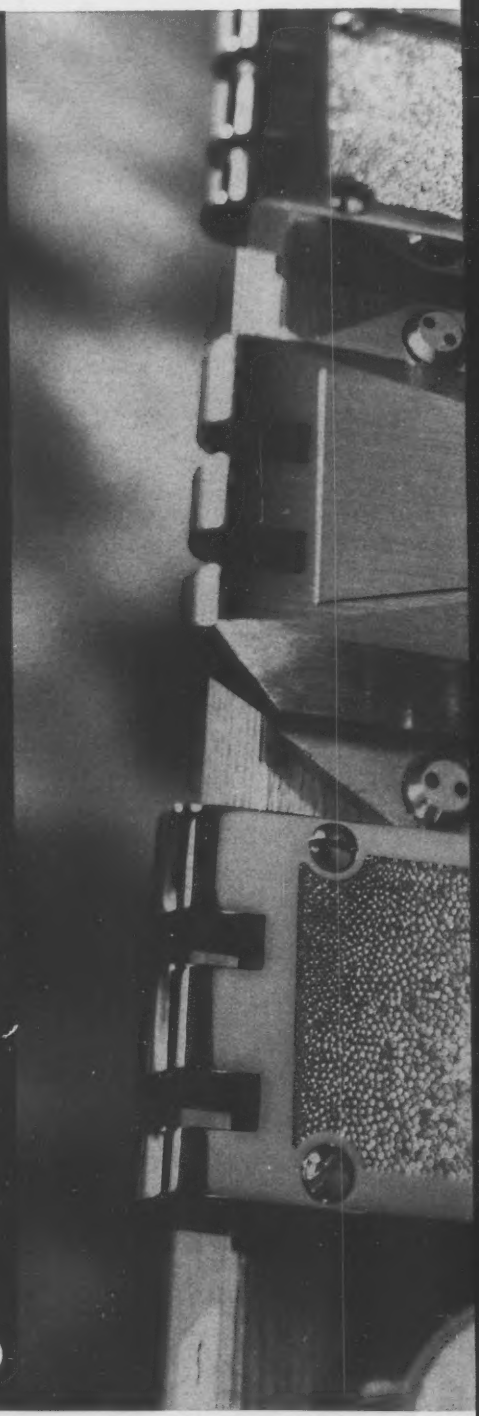

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Everex hopes to boost sales with dealer council

BY MICHAEL FITZGERALD
CW STAFF

FREMONT, Calif. — Everex Systems, Inc.'s recently formed reseller council held its first meetings late last month.

Dealers who attended gave thumbs-up to the company's effort, which some saw as a needed step away from the personal computer and peripherals vendor's exclusive focus on engineering. "[Everex] is changing from an engineering-oriented company to a sales and marketing-type company," said Brian Stamm, president of Buffalo Grove, Ill.-based Sherlock Systems, Inc., the Midwest's largest Everex dealer. Stamm said he thinks this shift will make Everex more competitive, as it had a tendency in the past to engineer products that the market might not necessarily want to buy.

Analysts said the reseller council could help Everex tailor its product line more closely to customer demands by giving an ear to those who interact with end users.

"There are communication benefits to the vendor [from having a dealer council], if they can hear what they're saying," said Richard Zwetchkenbaum, an analyst at International Data Corp., a market research firm in Framingham, Mass.

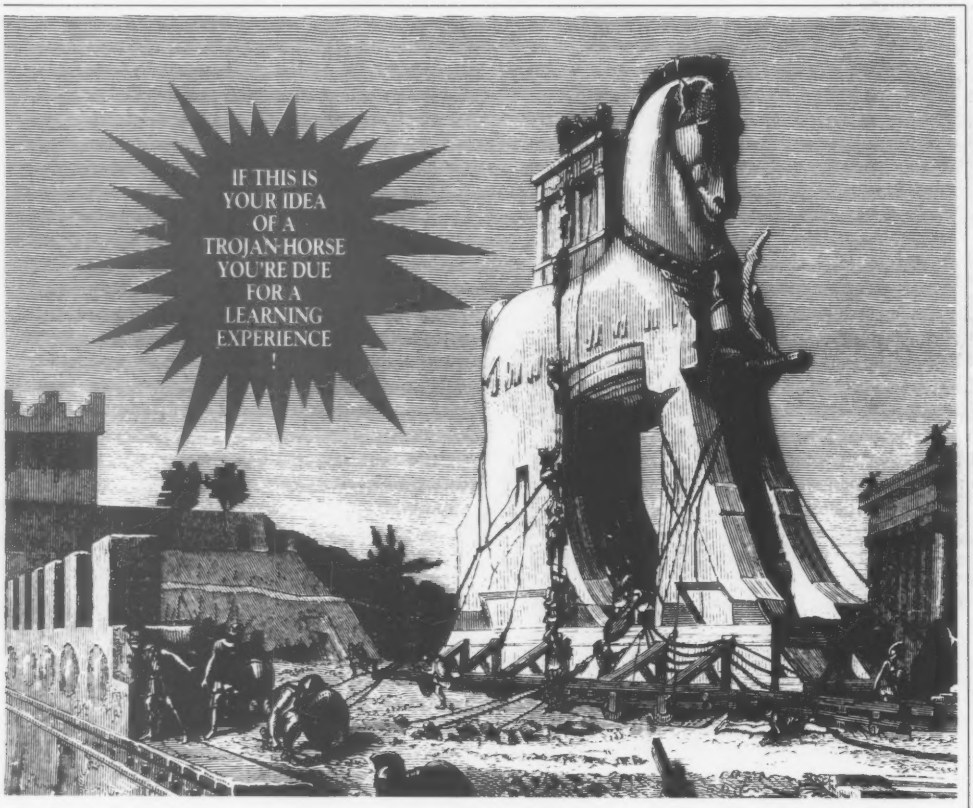
Everex has split its dealer council into Eastern and Western groups: 12 dealers attended the Western meetings, 16 the Eastern. Top Everex management conducted the meetings, which were spread over two days.

"I think [creating the council] was a major indication of Everex's interest in finding out where key dealers think they're headed and getting our comments to help them reevaluate [those directions]," said Samuel Adicoff, president of PC Edge, Inc., a reseller in San Jose, Calif. Adicoff said dealers were asked for "quite a bit" of input on product positioning and were given presentations by top Everex officials on subjects ranging from credit programs to manufacturing.

Most of the focus of the meetings was on marketing and selling products. "We wanted to get feedback on everything from product items to how we could best serve them," said Mark Marlow, vice president of marketing.

Dealer councils are fairly common, said Seymour Merrin, industry consultant and publisher of Channelmarker Publications in Palo Alto, Calif. However, he said dealer councils are typically used poorly by vendors and occasionally can hurt a company.

"If it's done right, it could be interesting," said Merrin, who is not familiar with Everex's dealer effort. "If it's done improperly, it could cost them a lot of money because they'll make wrong decisions."



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EXECUTIVE CORNER

Jeremy Davis dubbed chief at D&B division

Employee benefits administration software developer **Erisco**, a division of **The Dun & Bradstreet Corp.**, has named **Jeremy M. Davis** its new president. Davis, 37, joins Erisco from Logistics Data Systems, a division of Dun & Bradstreet subsidiary Nielsen Marketing Research, where he headed up international operations.

Boole & Babbage, Inc.'s chief financial officer, David S. Dury, recently left the Sunnyvale, Calif.-based firm to become senior vice president and CFO at San Jose, Calif.-based disk drive manufacturer **Maxtor Corp.** with more than $1 billion in revenue. Paul Newton, a longtime director on Boole & Babbage's board and the former chief executive officer of Ingres Corp. (now part of Ask Computer Systems, Inc.), will be acting executive vice president and CFO at Boole & Babbage until a permanent replacement for Dury can be found.

Marietta, Ga.-based computer-aided design and manufacturing systems vendor **Lectra Systems, Inc.** has a new president: **David Siegelman**, who has served since 1986 as the firm's vice president and general manager of U.S. operations. Prior to joining Lectra in 1982, Siegelman held marketing positions at Compuserve, Inc. and NCR Corp.

Jeffrey E. Shaw, a computer industry veteran manager who most recently served as vice president of global support operations at network management products vendor **Octocom Systems, Inc.**, recently joined video teleconferencing player **Picturetel Corp.** Shaw replaces Ezra H. Sheffres, who is retiring from Picturetel.

Bell & Howell Co. recently named **Dieter E. A. Tannenberg** president and CEO of its Lincolnwood, Ill.-based subsidiary, **Bell & Howell Document Management Products Co.** Veteran corporate executive Tannenberg replaces acting president Jerry Herb, who is currently vice president of administration at the company.

Promise of Siemens-Nixdorf union still unmet

ANALYSIS

BY EMMA WOOLLACOTT
IDG NEWS SERVICE

LONDON — When Germany-based Siemens-Nixdorf Informationssysteme AG was created last October by the merger of Germany's Nixdorf Computer AG and the data and information systems group of Siemens AG, great things were promised.

The promises are not coming true as early or as easily as was originally hoped. The company's year-end results are due in a few weeks and are widely expected to show a loss. Some analysts suggested it could be as high as $220 million.

Was the deal imprudent, or are industry observers simply impatient? While noting that the combined company still has major hurdles to overcome, analysts urged the long-term view.

Nixdorf, analysts agreed, was in worse shape than Siemens realized when it bought the company. John Woods, an independent management consultant, said, "Nixdorf was in a really bad way: Its product line was in a mess, and it didn't have a sensible transition line from its own proprietary lines."

Moreover, the merger exacerbated the problem by creating a firm with overlapping product lines. After the merger, Siemens-Nixdorf was left saddled with four basic ranges — a proprietary and an "open" system from each. "They never had a decent migration policy; they've only just about got one now," Woods said.

And Siemens-Nixdorf is not finding it easy to drop its proprietary lines. Not only does the company stand to lose an existing large customer base that is currently locked in, but it is also making strong sales to Eastern Germany.

However, Woods said he believes it would have been unreasonable to expect Siemens-Nixdorf to rationalize its product lines too quickly.

"Where there have been two companies of a reasonably large size, it has always taken a long time because no one is willing to give up his product lines. Bull, for example, can't really grasp the nettle on its own product line and hasn't for 20 years," he said.

In addition, if Siemens-Nixdorf is being held back by the need to rationalize, so is most of its European — and ex-European — competition. Japan's Mitsubishi Electronic Corp. has bought UK-based Apricot Computer PLC's manufacturing side; Japan's Fujitsu Ltd. has bought Britain's International Computers Ltd.; and Digital Equipment Corp. has bought both Germany-based Mannesmann-Kienzle and Netherlands-based Philips N.V.'s non-personal computer business. Other multiuser suppliers such as France's Groupe Bull and Italy's Ing. C. Olivetti & Co. have recently felt the need to reorganize as well.

Despite its problems, Siemens-Nixdorf still has Europe's No. 1 multiuser computing company. The Yankee Group's European director, William Ehmcke, said he believes the company is in a good position for the future but needs to move fast to enter other markets and rationalize its product line. "My long-term feeling for Siemens-Nixdorf is that they are the biggest company in Europe, but they've inherited that rather than earned it," he said.

Earning it, he and other analysts agreed, will have to include the company's showing that it can move its huge German marketing success beyond German borders.

Woollacott writes for PC Business World, *an IDG Communications British publication.*

Rodime turning to courts for cash?

BY RON CONDON
IDG NEWS SERVICE

Rodime PLC's decision to pull out of disk manufacturing late last month [CW, Sept. 2] might not mean the end of the Scottish disk drive pioneer but simply the waning of its days as a disk drive maker. The firm appears to be turning to the courts as a source of revenue — an alternative that is popping up in the computer industry with increasing frequency (see story page 74).

Formed in 1980 in Scotland by former Burroughs Corp. executives, Rodime produced the world's first 3½-in. hard disk drives. But it failed to exploit its lead, and others gulped the lion's share of the emerging market.

Only recently did Rodime establish its rights to certain aspects of the 3½-in. disk. The U.S. Patent Office upheld the company's claim in 1988, and since then, IBM has paid Rodime $13 million in an out-of-court settlement. Conner Peripherals, Inc. has also made payments.

Having decided to fold its plants in Singapore and Scotland and apply for Chapter 11 bankruptcy protection for its U.S. subsidiary, the company has signaled its withdrawal from manufacturing altogether.

It now sees itself as an intellectual property company and plans to go after the 30-odd disk manufacturers around the world that have not yet recognized Rodime's rights to the 3½-in. design.

The company said its decision came as a result of three factors:

- Joint-venture negotiations in South Korea and Taiwan failed.
- A weak market led to a drop in orders.
- Technical problems and a lack of working capital delayed the introduction of its new 1-in.-high 120M-byte disk and a new 400/540M-byte product.

Rodime will reduce its work force of 620 people by nearly half. The company posted a loss of $7.6 million on sales of $46 million in the first six months of the year ending this month.

INTERNATIONAL BRIEFS

No transplant for Tulip

▶ Dutch personal computer maker **Tulip Computers N.V.** has ditched plans to switch to manufacturing in Ireland, a move made attractive by the prospect of reduced tax rates. The Dutch government reportedly stepped in and made it worthwhile for the firm to remain in Holland. On the heels of the government's action, Tulip has announced plans for a $12 million plant in Den Bosch, expected to yield an annual crop of 30,000 PCs.

Another government seeds tech

▶ In an effort to reduce dependency on software imports from the U.S. and foster development of local industry, the **Korean Institute of Science and Technology** has targeted 10 areas for intensive development. Electronic publishing, for example, is slated to receive some $417,000 in government funding and an additional $1.4 million from the private sector to speed the development of a localized desktop publishing package that will include Korean fonts, picture processing and a wide variety of graphics.

Ciao

▶ **Italy** will abolish its state monopoly on mobile telephone networks and will open bids to one or more private sector operators, possibly by mid-1992, according to a recent report in the French business press. Two groups — including Italian firms **Fiat S.p.A.** and **Ing. C. Olivetti & Co.** — are currently vying for the lucrative rights.

Full-course menu

▶ **Debis Systemhaus GmbH**, a subsidiary of the services unit of German industrial group **Daimler-Benz AG**, last week acquired the majority of market research firm **Diebold Group**'s European units. Financial details were not revealed; however, analysts pegged the Diebold holdings at approximately $29 million. Debis expects the research units to round out its soup-to-nuts services menu, said Chairman Karl-Heinz Achinger.

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BIM-FMAP — CICS BMS on-line map generation and maintenance. **DOS** and **OS.**

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COMMENTARY

Nell Margolis

Courtship rituals

The epidemic of lawsuits now gripping the computer industry is a clear sign of an industry in boisterous good health.

I'm talking, of course, about the legal industry. For the computer industry, it's a long ride in the wrong direction.

It doesn't take a rocket scientist to figure out why lawyers want to litigate: They make big chunks of money, get to ply their skills and are serving their clients.

But why do rocket scientists want to go to court? They spend big chunks of money — the tab for lawyers' fees alone came to $22 million last year, according to a recent report in a major weekly newsmagazine — put their work on hold and are abandoning their customers.

That last is a simple matter of Adam Smith-type logic: Time, money and energy are all in finite supply. Any amount of any of those scarce commodities that is being spent (and spent and spent) on lawsuits is not going toward research, development, strategizing, marketing and all the other activities that bring products, services and support to users.

For lawyers, the computer industry's wholesale embrace of The Lawsuit is a godsend — and just in time. What with no-fault divorces, formbook contracts, simplified tax laws, disappearing banks and the collapse of the junk bond market, some of the lawyers who weren't prescient enough to specialize in bankruptcy were starting to get seriously concerned about where the next sweet spot was going to be.

Thankfully, the techies showed 'em.

Right in the vanguard of a national mania, computer firms are roaring into court in search of relief from every imaginable commercial pain, particularly that burning sensation from shrinking margins.

And make no mistake about who's leading this stampede.

"I'm appalled at some of the suits my clients want me to bring," a seasoned computer lawyer confided recently. "Competition getting too tough? Bring a suit. Somebody out there has a product that looks like yours or a name that sounds like yours or an ad campaign that reminds you of yours? Bring a suit. Stockholders complaining? Bring a suit."

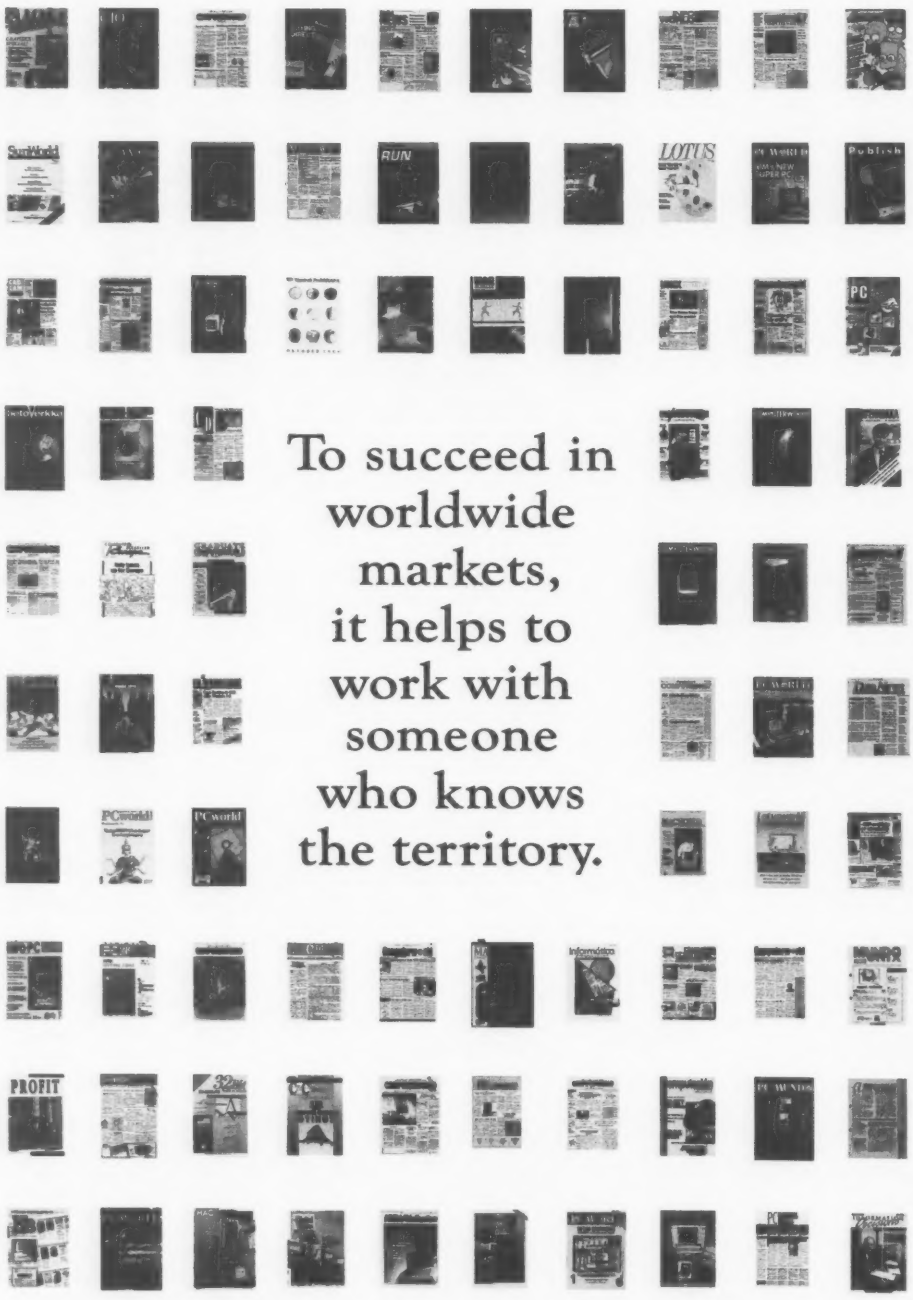
In fact, he noted, stockholders may be partly responsible for getting executives hooked on litigation. In a world in which all rules are off — we not only don't know which leader and which philosophy are ascendant in the USSR from hour to hour right now, we don't even know if ther *is* a USSR, — there's still one thing you can count on: Within three business days of a disappointing earnings report from a computer company, stockholders will file suit against the firm on grounds that the company misled them. "The whole notion that investment is risk, and risk means you might lose, has flown out the window," the lawyer said.

Like many lawyers lucky enough to have computer industry clients, "I own a prestigious automobile of German manufacture," the lawyer said. "But I'd have a stable of them if I sued half the people my clients try to get me to sue."

When lawyers are telling clients to back off, things have reached a pretty pass. And what do you call it when Dan Quayle is the voice of reason?

Try August 1991. That's when the vice president made a speech before the American Bar Association and said that we've become a nation far too obsessed with legal action. When the fellow whose foot is often in his mouth is the only one with his feet on the ground, it's probably time to rethink the situation.

Margolis is *Computerworld*'s senior editor, industry.



IDI takes Zylab, eyes desktop arena

DUBLIN, Ohio — Information Dimensions, Inc. (IDI) acquired Zylab Corp. late last month, making its boldest play yet into the desktop side of the text-retrieval market. Details of the multimillion-dollar deal were not disclosed.

"We've been looking for quite some time to expand our product line, for products with a synergy with ours," said Mike Cunningham, vice president of marketing and research development at IDI.

For example, both firms have introduced products using Microsoft Corp.'s Windows 3.0 environment. Windows will be the common end-user interface for a product combining Zylab's Zyindex and IDI's Basis Plus, a text-retrieval tool for large mainframe, midrange and large Unix platforms, due out later this year, Cunningham said.

IDI said the new software product will offer scalable text-retrieval solutions, from notebook computers to enterprisewide document databases.

Some 2,200 users have signed up for the $5,000 first-time license fee for Basis Plus since it was introduced in late 1989. Index is said to have sold 35,000 copies of its $395 software package for personal computers and PC networks.

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The World of Information Technology

*Source: International Data Corporation. © 1991 International Data Group.

I-net

FROM PAGE 69

Pentagon buildings — [for instance], they were aware of asbestos issues and who to contact to get clearance for entry into classified work areas."

One factor that should contribute to I-Net's long-term survival is that the company is aggressively seeking contracts beyond markets to which its current Small Business Administration 8(a) status applies. "We want to get commercial business while we still have the 8(a) crutch to hold onto," Bajaj said. That status, which gives preferential treatment to small, minority-owned firms bidding for government work, is due to lapse in a few years.

A strong "technical bent" has served I-Net well as a government contractor, Richard said. "They are highly engineering oriented; they stress that, as opposed to marketing flash."

Added Richard, "So many 8(a) firms get 8(a) designation, then worry about technical staff — I-Net did both at once."

However, I-Net will have to "beef up its marketing strategy" to succeed in the open, commercial, non-8(a) marketplace, Richard emphasized. "That's a tough transition to make."

Rough rivalry

While I-Net has landed no major jobs in the commercial arena, the firm has performed small tasks for Amoco Corp. and Exxon Corp. It is also seeking to break into new arenas by partnering with major players such as IBM, MCI Communications Corp., Sprint Communications Co. and Westinghouse Electric Corp.

Not all I-Net stories have happy endings. During the past six months, the firm bid on a $2 million laptop contract put out by the U.S. Census Bureau and lost the bid. Recently, I-Net lost the chance to provide networked workstations for NASA in Houston as a subcontractor to Loral Corp.

Moving into the commercial systems integration business and competing with "the big boys" is a long-term but definite goal for I-Net, founder Kavelle Bajaj said. The firm is also looking to diversify overseas and recently landed a small job in Austria.

ELISABETH HORWITT

Contractors in high demand as companies test the hiring waters

BY JANET MASON
SPECIAL TO CW

Information systems professionals seduced by the high wages, flexible hours, variety of work assignments and travel that contracting offers have even more to resist these days: Economic conditions are actually creating more opportunities for independents.

The mission of a contractor is to provide specialized IS skills to companies that have temporary openings — whether the assignment be in sunny Florida, windy Chicago or overseas.

"All types of companies use contractors from finance to manufacturing," says Ron Montgomery, sales and marketing director at The Computer Merchant Ltd., a software engineering firm that places contractors.

Recently, Montgomery has witnessed an increase in the use of contractors, especially by computer vendors developing products for new platforms such as C and Unix. "Companies don't have a lot of employees sitting around anymore, so they use contractors to hit the ground running without a lot of overhead," he says.

Now that economic conditions are slowly picking up, the demand for contractors is even higher, says Pat Goglia, a Stamford, Conn.-based contractor. Companies are testing the waters by hiring contractors first before they decide they can hire full-time employees, she says.

Overall, companies seek out contractors with rare skills such as Mumps (a fairly old medical language), Unix and Ultrix, according to Montgomery. Other companies look for IS professionals who possess knowledge in high-demand areas such as communications protocols, graphical user interfaces and Application System/400 skills.

While contractors can be found in all areas of the country, "the hot pockets for activity are Northern California, the Southeast and Texas," says Steve Kenda, president of Kenda Systems, Inc., a Salem, N.H.-based contractor placement agency.

Contracting attractions

The No. 1 attraction for IS professionals who choose to become contractors is that they earn high hourly rates. "I sometimes earn more than the vice president I'm reporting to," says Goglia, who is currently working on database design and analysis for a New England helicopter manufacturer.

In highly specialized fields, contractors can earn 40% to 50% more than a full-time IS professional in the same technical arena, Kenda says. He attributes the high pay to the fact that contractors provide companies with specialized skills without the benefit of medical insurance, paid vacations and job security.

Job flexibility also ranks high for contractors — especially those who wish to raise a family. For example, Donna Nichols, a Washington, D.C.-based contractor, traded IS management responsibilities for technical contracting work when doctors advised her that she would be unable to have children if she didn't leave the high-pressure environment at her former job. Less than two years later, she is working successfully as a contractor and is expecting her second child.

Some contractors simply like to travel and experience living in different regions of the country.

"I like the lifestyle," says Jack E. Thomas, a former Washington, D.C.-based consultant who's now working on a contract for GTE Corp. in Bradenton, Fla. "I'm 15 minutes away from the ocean, and it never snows. But if I received a good offer for another contract elsewhere, I'd probably move again."

Another "nomad" by choice is contractor Ken Perry. After finishing a contract position in New York, he sailed his 60-ft houseboat down the coast to find a temporary position in Florida. He now works for Nielsen Media Research in Dunedin, Fla.

Other pluses for contractors include gaining a wide scope of experience from taking on a variety of projects as these professionals move from company to company.

"People who contract for two years have the equivalent experience of someone working twice as long in a full-time job because they move around and take on different projects," Montgomery says.

Finally, Perry credits his contracting background with improving his interpersonal skills. "When I first started out, I related more to machinery than to people," he says. "But now, since I interact with a lot of different people, my social skills are better."

Downtime drawbacks

While there are plenty of positives to working as a contractor, those who do it are quick to point out that the field is not all houseboats and fat paychecks. All of them agree that the No. 1 drawback is downtime between contracts. "In the early days, I had so much fear about finding another contract that I rarely took time off," Goglia says.

When it comes to the lack of job security, medical insurance and vacation time, however, contractors are at odds with each other. Some, like Perry, insist that there really is no job security, even for full-time employees, because of layoffs. Goglia, however, who is a single mother, says that given the right full-time job, health insurance and job security would be "nice to have."

Contractors also agree that another disadvantage is the lack of management advancement. Perry views this as a catch-22. "We're less able to move into management because we're not full time," he explains. "But the company brings us in because we're outside the culture and are not afraid to introduce new ideas."

Another minus to contracting is that employees who travel from city to city are under a great deal of pressure to do high-quality work while relocating. "I will rarely relocate someone who has not relocated already," Kenda says. "There's too many unknowns for the first time. Lots of people like to talk about moving around, but only about 25% [of IS contractors] are willing to act on it."

Regardless if contractors move around the country or stay in one place, their reputations are on the line every day. "The ability for a contractor to get work rests on his last contract," Kenda says.

Mason is a free-lance writer based in Philadelphia.

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BY STEVE FOGLE
SPECIAL TO CW

Q What are some good approaches to answering the following questions during an interview: What are your weaknesses? What do you regret most during your time at company XYZ? And where do you see yourself in five to 10 years?

Initials and town withheld

A A good rule of thumb is to be forthcoming. The answers to these questions will reflect how you fit into the organization.

When asked the question about weaknesses, be sure to talk about where you have room for improvement and where you may need training and development. A company is hiring you for your strengths and what you can bring to the firm.

In regard to the second question, talk about real issues and what you are looking for that you don't have in your current situation. This can help you develop a chemistry between you and your prospective employer.

The question regarding where you see yourself in the next several years should once again be answered honestly. If you don't know, say so. If you would like to be doing something completely different than the job for which you are applying, talk about that as well. A job change is a big move and your career is a big part of your life, so you want to have the best place for your talents.

Q I have a master's degree in biology and have worked for several years as a research biologist. During the past four years, however, I've worked as a systems programmer/capacity planner. How can I find a job that would combine my scientific training and information systems skills? Two fields I am considering are computer imaging and artificial intelligence.

Initials and town withheld

FAST TRACK
CAREER ADVICE FOR THE '90s

A The computer imaging and artificial intelligence systems fields would be appropriate, but also consider computer-aided design, engineering and manufacturing companies as well.

I think there's a demand for people with your biology background, so you can probably leverage yourself well in a medical or scientific environment.

Consider a position with a university, research institute or pharmaceutical biotechnology firm.

Q I'm a computer science major and would like to know what opportunities lie before me in the business world. Also, I'd like some information on scholarships and grants.

N.P.
Skokie, Ill.

A Opportunities are rising in telecommunications, networking and international positions. You can gain experience and exposure early in your career through summer internships in an IS environment and by networking with local IS trade groups. Contact your college financial aid office regarding grants and scholarships.

Q Where can I find the "Directory of Top Computer Executives", which lists large computer users, the hardware they use, along with the address, phone number and contact names?

S.M.
Ottawa

A You can write to Applied Computer Research, Inc., P.O. Box 82266, Phoenix, Ariz. 85071, or call (602) 995-5929.

Fogle is regional director at the San Francisco office of the Alexander Group, a Houston-based executive search firm.

We welcome your questions. Send them to Cathy Duffy, Careers Fast Track, Computerworld, *375 Cochituate Road, Framingham, Mass. 01701, or fax them to (508) 875-8931. Letters may be edited for brevity and clarity. Your initials and town will be printed unless you request otherwise.*

JOB SNAPSHOT

Pick professionals

▶ **BEST EDUCATION:** Information systems employers who use Pick Systems' Pick multiuser operating system say when they hire professionals, they aren't looking for a specific degree. What they are looking for is a knowledge of databases, operating systems, communications and general programming concepts. To some employers, having a bachelor's degree is not even necessary: They say some of their best people are self-trained professionals without college degrees.

▶ **CAREER PLUSES:** There's so much Pick software around that Pick professionals are seldom without jobs, and interest in Pick seems to be growing because of its union with Unix and DOS. Pick projects tend to get shot down less than projects in other environments because of the operating system's expandability and flexibility, which make it easier and faster to complete projects without bringing the system down. Pick often offers a wider exposure to IS (systems development, applications development and end-user contact) because it tends to be used in smaller IS shops.

▶ **CAREER MINUSES:** This small-shop popularity can also be a minus. Because Pick is mostly found in small, minicomputer-based companies, it may limit financial rewards. Also, many Pick applications were developed in the 1970s, using hardware that is now obsolete. In addition, Pick developers can no longer count on being Pick-exclusive: They will have to learn Unix, C and DOS.

▶ **BEST JOB OPPORTUNITIES:** Areas that have sizable Pick populations include Southern California, Florida, New York, Australia and England. While Pick use cuts across most industries, it has traditionally been strong in health care, distribution, accounting, marketing, retail and real estate.

▶ **REAL-WORLD ADVICE:** The best way to get involved with Pick is to take the following steps:

- Learn the language by reading books on Pick.
- Join a Pick user group.
- Attend seminars. Many commercial firms hold seminars in Pick; most course fees range between $500 and $1,000. Three popular Pick education firms are: 1) Comprehensive Computer Services in East Islip, N.Y.; 2) JES & Associates in Irvine, Calif.; and 3) Discovery Consultants in Reston, Va.

Researched and written by Kathleen Gow, a free-lance writer based in Medford, Mass.

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SOURCE: Skill Survey of Computerworld's Audience, May 1989.

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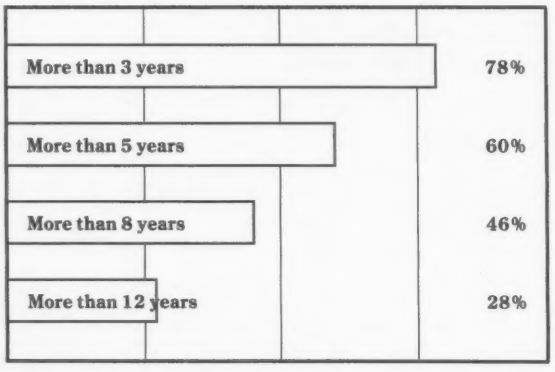

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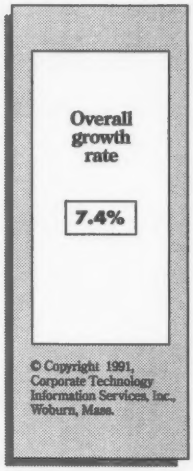

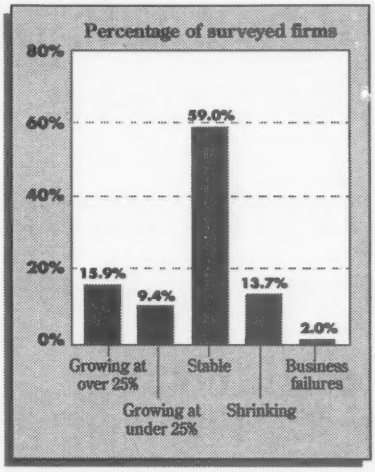

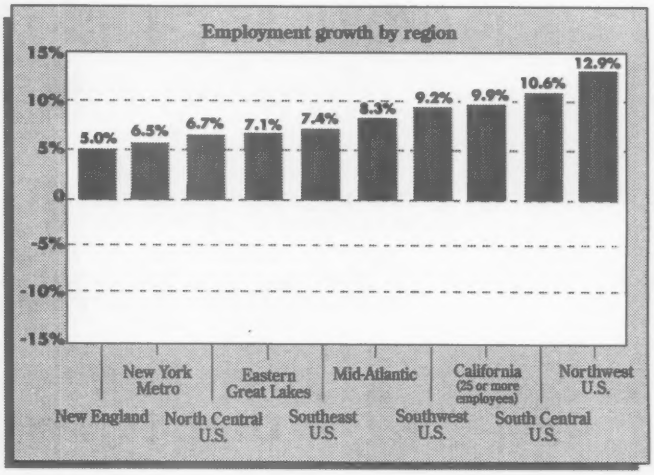

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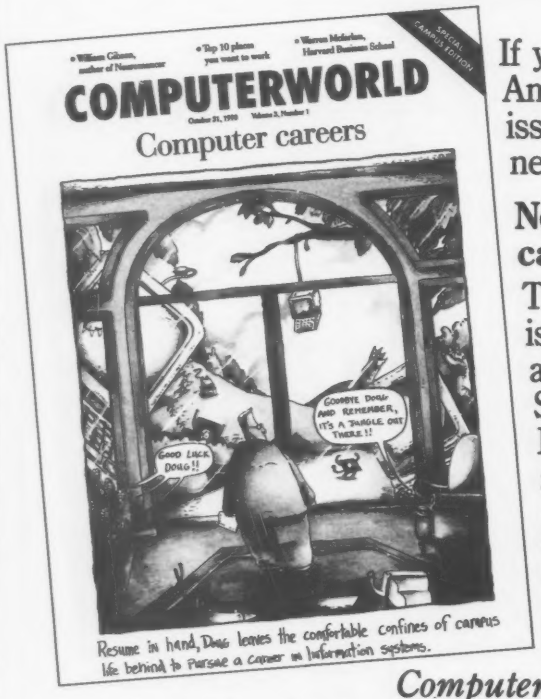

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Planned Editorial Features:

(subject to revision)

- Companies where computer career students want to work. And their top choices for: Information Systems, Engineering, Sales & Marketing, Technical Support, Research & Development.
- Prospects for minorities in computing.
- Merits of an Electrical Engineering degree for a computer career.
- Information Systems salaries from Computerworld's annual survey with the Data Processing Management Association.

MARKETPLACE

Resolving vendor disputes outside of court

Legal Eye is a monthly column exploring legal issues and their impact on information systems.

BY JOEL B. GILMAN
SPECIAL TO CW

For information systems departments, disputes with vendors are about as common as a cold day in Alaska. It makes sense, then, for IS professionals to learn the fine art of conflict resolution.

Conflict resolution can take many forms, from sitting down with the other side and talking over a cup of coffee to fighting it out in a multimillion-dollar courtroom battle.

Obviously, battles aren't an ideal method from anyone's perspective, so it is worthwhile to learn as much as possible about less extensive alternatives. Basically, there are three such alternatives: negotiate, mediate and arbitrate.

Open ears

Too often, professionals view contract disputes as holy wars, wherein no quarter is given or asked. But consider this: Does an IS professional's job duties really include wearing a suit of armor and wielding a sword? A far more sensible approach is to simply listen to what the other party has to say, without drawing any conclusions as to the rightness or wrongness of their position. Besides, the company will save vast sums of money every time an IS professional keeps a conflict out of the lawyer's hands.

An IS professional whose job responsibilities include negotiating with vendors or customers may want to pick up *Getting to Yes* (Fisher and Ury, Penguin Books, 1983). It is a simple, straightforward book that explains the difference between constructive negotiation and verbal combat. The book demonstrates that the idea is to focus on interests, not on positions, personality differences or supposed wrongs already committed. The book starts out with the premise that it is in both parties' best interest to resolve a dispute.

If face-to-face negotiation breaks down into an endless argument, an IS professional can also consider mediation.

A number of communities offer both private and publicly funded "dispute resolution" services. These services feature trained mediators who help the disputants stay focused on the issues and who help them identify common interests on which to build a solution to the conflict.

Mediation often works simply because an uninterested third party is there to help both sides think straight — something that's not always easy to do in the heat of an argument. The mediator neither judges the situation nor suggests who is right or wrong. His role is simply to keep the discussion on the issues, help the parties see each other's interests and assist both sides in finding alternatives.

The pluses to mediation are that it's completely voluntary, and it's binding only if both parties agree on the outcome. Mediation is also quite inexpensive. For this reason alone, it is almost always worth a try before filing a lawsuit.

But mediation is not a panacea. For it to work, both parties have to be willing to hear what the other side has to say. For example, for an IS professional to insist "I'll see you in court if you don't give in" can be disastrous unless he has previously consulted an attorney to see where he stands.

Although frequently confused with mediation, arbitration is quite a different process. In arbitration, an independent arbitrator renders a decision, after listening to presentations by both parties. Arbitration is very much like going to court, except that the arbitrator doesn't wear a robe or sit at a high bench.

There are many options in arbitration. Most states have an arbitration system as an adjunct to the courts. Not surprisingly, these forums are quite formal and follow legal rules and procedures.

However, a number of private arbitration services are also available. An IS professional can locate an arbitrator with particular expertise in computer system contracts, for example, through the American Arbitration Association and a number of similar organizations.

The greatest advantage to arbitration over going to court is that the disputing parties can shop around for an arbitrator who really understands the business issues involved. If the disputants go to court, the case will likely be heard by a judge or jury who do not have a background in computer transactions.

A number of arbitration and mediation services have emerged in recent years. These usually employ retired judges, with the same informality of arbitration or mediation sessions. However, these services can often provide the worst of two worlds.

As arbitrators, retired judges are no more likely to have the specific expertise in your field of business than are active judges. Further, retired or not, judges usually have no particular training in mediation skills, which is crucial for an effective mediation session.

If all three steps fail, the IS professional can still go to court. However, a lawsuit can be unimaginably expensive. To press even a small suit, a company can expect to pay a minimum of $20,000 in attorney's fees, witness fees and court costs.

Then there is the amount of time the company will have to put in taking depositions and locating documents, which helps the attorneys prepare for trial.

And don't forget the personal agony involved. Most people who've been through a trial say they would rather have a root canal.

Gilman is an attorney in Seattle who practices in the field of computer law.

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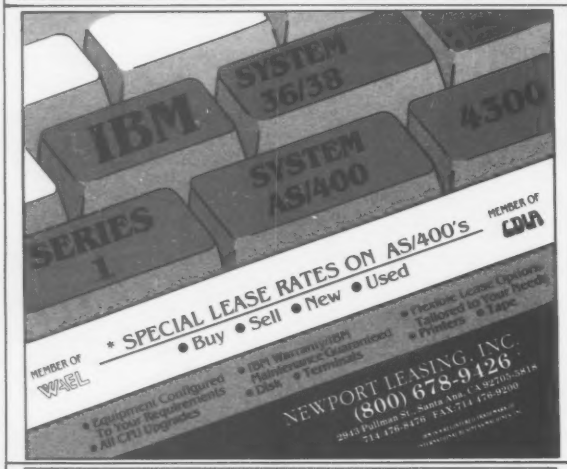

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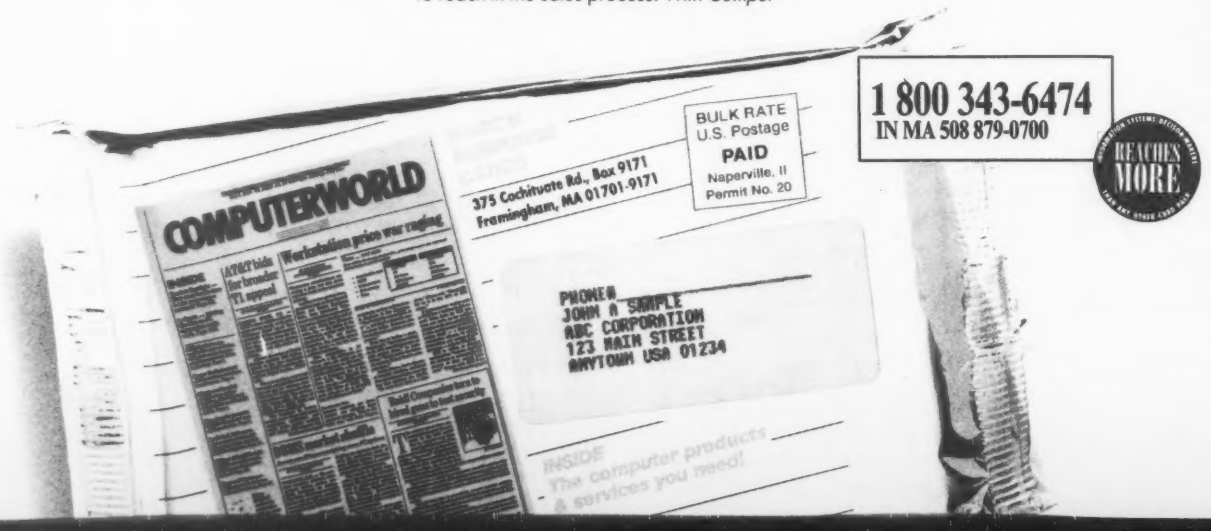

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INDUSTRY ALMANAC

INVESTMENT OUTLOOK: WIRELESS LANS

Users are likely to demand wireless local-area network technology to connect their portable personal computers and laptops, according to vendors that attended a recent Bear, Stearns & Co. technology conference.

A recent Frost & Sullivan, Inc. report said 40% of networked terminals in U.S. businesses are moved, added or changed in a given year. Installation and hardware maintenance were responsible for the largest chunks of 1990's $12 billion LAN maintenance market, the New York-based market research firm said. Motorola, Inc. and NCR Corp., which presented their wireless LAN products to Bear, Stearns, said their wireless products can help users address these LAN issues.

The following is a look at what the companies are offering:

Motorola's Altair

The Schaumburg, Ill.-based company first introduced Altair, a grand plan for wireless network technology, in October 1990. Four months later, Motorola unveiled Altair Wireless Ethernet, a product that provides wireless connectivity for up to 32 users on an Ethernet LAN.

Altair, which uses spread-spectrum radio technology, was designed to be end-user installable, said Mil Ovan, senior marketing manager. Motorola has approximately 100 million wireless customers worldwide, including subscribers to its cellular phone technology, Ovin said.

The user component of Altair, which connects to PCs and peripherals, costs $995. The control module, which routes radio signals to appropriate network nodes, is priced at $3,995. Altair can help cut down the cost of LAN installation because users can set it up, Motorola said.

Wall Street wisdom

Comparison of investment ratings for major wireless LAN players

Company, recent stock price	Alex. Brown & Sons	Bear, Stearns	Donaldson, Lufkin & Jenrette	Prudential Securities	Shearson Lehman Brothers
Motorola $68.25	Neutral	Hold	Moderately attractive	Hold	Buy
NCR $108.13	Sell	Avoid	Neutral	Hold	Neutral

Source: Brokerage firm reports — CW Chart: Michael Siggins

NCR's Wavelan

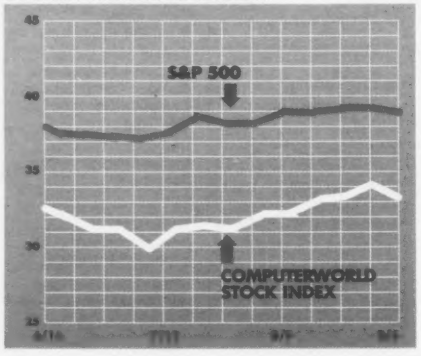
Wavelan consists of an antenna and a card that plug into PCs, workstations, servers and bridges. Like Motorola's product, Wavelan uses radio frequency to transmit data. The cost is $1,390 per node. Senior product manager Daryl Maddox emphasized that AT&T's technology "vision" matches NCR's goal "to be in the standards-based network computing business."

The Dayton, Ohio-based firm outlined three phases for wireless implementation. In the first, wireless technology is used where cable is difficult to install because of either cost or physical location. The market is currently moving from this phase to the next phase. In stage two, wireless is used as an alternative to copper cabling to extend existing LANs or add new ones.

Phase three will unravel when wireless technology provides faster data-transfer rates, better reliability and cheaper prices compared with cable. Users will then replace existing copper infrastructures with wireless ones.

KIM S. NASH

STOCK TRADING INDEX



THIS WEEK'S HIGHLIGHTS

- Knowledgeware, Inc., which recently said it will acquire Intellicorp, Inc., nosedived 6 points — or 20% — last week to 23¾ after the resignation of its president and chief operating officer. Intellicorp fell ⅝ of a point, closing Thursday at 2¾.
- Personal computer hardware and software stocks were active last week. Adobe Systems, Inc. plummeted 5 points to 46; the firm recently announced that Apple Computer, Inc.'s System 7.0 operating system will support Adobe's font technology. Apple fell 2 points to 51, and Microsoft Corp. dropped 5¼ points to 80½.
- Intel Corp., which is being sued for antitrust violations by rival Advanced Micro Devices, Inc., fell 3¾ points to 47½. AMD slipped ½ a point to 11⅝.
- Digital Equipment Corp., whose chief financial officer turned in a surprise resignation last week, skidded 2½ points to 61⅛. Meanwhile, IBM increased 2¾ to 98¼, and Unisys Corp. slid ¼ of a point to 5½.

Computerworld Friday Stock Ticker

CLOSING PRICES FRIDAY, SEPTEMBER 6, 1991

TOP PERCENT GAINERS

Panaophic Systems	34.78
Banctec Inc.	14.29
LSI Logic Corp.	8.77
Fibronix Int'l Inc.	7.41
Data General Corp.	5.16

TOP PERCENT LOSERS

Intellicorp Inc.	-20.01
Tandon Corp.	-20.00
Knowledgeware Inc.	-18.64
Apertus Technologies	-16.67
Lotus Development	-16.46

TOP DOLLAR GAINERS

Panaophic Systems	4.00
IBM	2.38
Banctec Inc.	1.75
Policy Management Sys.	1.63
Dell Computer Corp	1.13

TOP DOLLAR LOSERS

Lotus Development	-6.50
Knowledgeware Inc.	-5.50
Storage Technology	-4.50
Microsoft Corp.	-4.50
Adobe Systems Inc.	-4.38

Exch	52-Week		Range	Sept. 6 Close	Wk Net Change	Wk Pct Change
Communications and Network Services					**Off 2.13%**	
OTC	10.50	5.38	3 COM Corp.	8.25	-0.13	-1.49
NYS	69.75	55.50	American Info Techs Corp.	62.00	0.25	0.40
NYS	40.38	29.00	AT&T	39.25	0.38	0.96
OTC	4.13	0.88	Artel Communication Corp.	1.75	-0.13	-6.67
NYS	58.25	40.25	Bell Atlantic Corp.	48.88	-1.00	-2.01
NYS	56.25	46.13	Bellsouth Corp.	49.63	0.75	1.53
NYS	52.88	15.88	Cabletron Systems	47.25	-1.13	-2.33
OTC	25.88	8.25	Compression Labs Inc.	19.13	-3.63	-15.93
OTC	5.13	2.44	Data Switch Corp.	2.50	-0.25	-9.09
NYS	21.50	8.88	Digital Comm. Assoc.	12.75	0.25	0.00
OTC	25.25	12.25	Dynatech Corp.	17.00	0.00	0.00
OTC	12.38	5.00	Fibronix Int'l Inc.	7.25	0.50	7.41
OTC	3.75	1.75	Gandalf Technologies Inc.	2.50	-0.38	-13.04
OTC	3.50	1.63	General Datacomm Inds.	2.38	0.00	0.00
NYS	33.50	24.88	GTE Corp.	29.25	-0.75	-2.50
NYS	63.00	40.25	ITT Corp.	58.75	-1.25	-2.08
OTC	34.63	17.88	MCI Communications Corp.	29.00	0.13	0.43
OTC	10.00	2.75	Microcom Inc.	9.25	0.00	0.00
NYS	13.50	4.00	Network Equipment Tech.	12.50	-0.13	-0.99
OTC	13.25	4.00	Network General	9.75	0.00	0.00
OTC	17.50	8.13	Network Systems Corp.	17.00	0.50	3.03
NYS	40.75	22.13	Northern Telecom Ltd.	39.88	0.00	0.00
OTC	39.00	8.63	Novell Inc. (s)	33.25	-0.38	-1.12
NYS	77.50	67.00	Nynex Corp.	75.25	-0.50	-0.66
NYS	47.50	38.50	Pacific Telesis Group	42.38	-0.50	-1.17
OTC	11.63	3.63	Penril Data Comm. Ntwks.	8.00	-0.13	-1.54
OTC	35.50	8.25	PictureTel Corp.	31.50	-2.50	-7.35
NYS	18.13	6.88	Scientific Atlanta Inc.	12.38	-1.25	-9.17
NYS	57.50	47.25	Southwestern Bell Corp.	55.88	0.88	1.59
NYS	31.50	20.63	United Telecom	25.25	-1.13	-4.27
NYS	40.75	32.88	US West Inc.	36.50	0.00	0.00
Computer Systems					**Off 2.00%**	
OTC	20.75	4.50	Advanced Logic Research	13.75	-0.25	-1.79
ASE	17.88	10.00	Amdahl Corp.	13.88	0.25	1.83
OTC	73.25	24.25	Apple Computer Inc.	51.50	-1.50	-2.83
OTC	9.13	3.50	Archive Corp.	3.88	0.13	3.33
OTC	32.75	7.50	AST Research Inc.	30.38	0.88	2.97
NYS	9.38	4.00	Bolt, Beranek & Newman	6.75	0.00	0.00
NYS	21.63	4.50	Commodore Int'l	10.50	-0.75	-6.67
NYS	74.25	29.88	Compaq Computer Corp.	34.50	-0.63	-1.78
OTC	2.13	0.13	Computer Automation Inc.	1.50	0.00	0.00
NYS	14.00	6.75	Control Data Corp.	8.88	0.00	0.00
NYS	19.75	8.38	Convex Computer	11.75	-1.38	-10.48
NYS	44.50	20.00	Cray Research Inc.	42.63	-1.00	-2.29
NYS	20.38	3.50	Data General Corp.	20.38	1.00	5.16
NYS	3.25	0.75	Datapoint Corp.	1.38	0.00	0.00
OTC	35.63	8.25	Dell Computer Corp.	33.75	1.13	3.45
NYS	83.00	45.50	Digital Equipment Corp.	61.38	-2.50	-3.91
NYS	28.88	13.75	Harris Corp.	23.75	0.00	0.00
NYS	56.63	24.88	Hewlett Packard Co.	50.63	-2.25	-4.26
NYS	139.75	94.00	IBM	99.38	2.38	2.45
OTC	12.00	7.75	Information Int'l	9.00	-0.75	-7.69
NYS	149.00	106.00	Matsushita Electronics	116.00	-2.00	-1.69
OTC	20.88	7.25	MIPS Computer Systems	10.50	-0.13	-1.18
NYS	110.00	44.50	NCR Corp.	109.63	0.63	0.57
OTC	29.50	10.75	Pyramid Technology	17.00	0.00	0.00
OTC	24.75	7.50	Sequent Computer Sys.	8.63	-0.13	-1.43
NYS	47.25	18.00	Silicon Graphics	40.38	-0.63	-1.52
NYS	40.75	14.63	Stratus Computer Inc.	39.38	-0.38	-0.94
OTC	38.63	15.00	Sun Microsystems Inc.	31.38	-0.88	-2.71
NYS	17.63	8.88	Tandem Computers Inc.	11.88	-0.75	-5.94
NYS	36.50	23.38	Tandy Corp.	28.13	-0.63	-2.17
OTC	23.75	6.75	Teradata	21.75	-0.75	-3.33
NYS	6.13	1.38	Ultimate Corp.	3.50	-0.50	-12.50
NYS	8.88	1.75	Unisys Corp.	5.38	-0.50	-8.51
ASE	5.75	2.00	Wang Labs Inc. (b)	2.88	-0.13	-4.17
Software & DP Services					**Off 3.09%**	
OTC	63.00	17.00	Adobe Systems Inc.	46.50	-4.38	-8.60
OTC	12.25	3.50	Aicorp	4.88	-0.88	-15.22
OTC	59.88	21.00	Aldus Corp.	35.50	-2.75	-7.19
OTC	28.50	12.00	American Mgmt. Systems	21.50	-0.50	-2.27
OTC	17.25	7.50	American Software Inc.	12.00	-0.25	-2.04
NYS	4.63	1.38	Anacomp Inc.	3.50	0.00	0.00
OTC	18.25	10.00	Analysts Int'l	14.00	0.25	1.82
OTC	16.63	4.88	Ashton-Tate	16.13	-0.38	-2.27
OTC	10.25	4.00	ASK Computer Sys.	10.13	0.25	2.53
NYS	37.00	22.63	Auto Data Processing	32.88	-2.13	-6.07
OTC	62.25	32.00	Autodesk Inc.	45.25	-3.00	-6.22
OTC	35.50	18.50	BGS Systems Inc.	33.75	0.75	2.27
OTC	50.00	17.75	BMC Software Inc.	47.75	-3.00	-5.91
OTC	16.25	8.75	Boole & Babbage Inc.	9.38	0.13	1.35
OTC	64.25	16.25	Borland Int'l	51.25	-3.50	-6.39
OTC	20.88	5.13	Cognos Inc.	15.63	-0.75	-4.58
NYS	11.13	4.38	Computer Associates	8.00	-0.38	-4.48
OTC	17.75	9.50	Computer Horizons	11.00	-0.50	-4.35
NYS	73.25	36.75	Computer Sciences	57.50	-1.75	-2.95
NYS	11.25	6.63	Computer Task Group	7.88	-0.63	-7.35
OTC	22.75	13.00	Comshare Inc.	20.50	0.00	0.00
OTC	13.25	3.75	Corporate Software	12.25	-0.38	-2.97
NYS	52.25	30.00	General Motors E (EDS)	49.13	-1.50	-2.96
OTC	18.75	7.25	Goal Systems Int'l	12.25	-1.00	-7.55
OTC	7.00	1.88	Hogan Systems Inc.	5.25	-0.50	-8.70
OTC	26.38	7.75	Information Resources	25.38	-0.63	-2.40
OTC	7.75	2.63	Informix Corp.	6.31	0.06	1.01
OTC	4.75	1.38	Intellicorp Inc.	2.75	-0.69	-20.01
OTC	31.50	10.50	Intergraph	19.00	-0.75	-3.80
OTC	8.25	2.50	Interleaf Inc.	6.88	-0.13	-1.79
OTC	19.25	6.88	Intersolv	10.00	0.13	1.23
OTC	43.25	10.00	Knowledgeware Inc.	24.00	-5.50	-18.64
OTC	45.00	16.75	Legent Corp.	25.00	-3.00	-10.71
OTC	40.75	12.50	Lotus Development	33.00	-6.50	-16.46
OTC	19.00	9.00	Mentor Graphics	13.00	-1.00	-7.14
OTC	32.00	9.75	Micrografx	12.50	0.00	0.00
OTC	86.75	35.75	Microsoft Corp.	80.75	-4.50	-5.28
NYS	15.63	4.00	On Line Software Int'l	15.50	0.00	0.00
OTC	11.50	4.88	Oracle Systems	10.88	-0.38	-3.33
NYS	15.50	7.00	Pansophic Systems	15.50	4.00	34.78
OTC	10.00	1.25	Phoenix Technologies	9.00	0.13	1.41
OTC	29.00	18.00	Platinum Technology	27.00	0.50	1.89
NYS	52.25	33.38	Policy Management Sys.	51.00	1.63	3.29
NYS	23.75	11.50	Reynolds & Reynolds	23.75	0.38	1.60
NYS	11.75	6.75	Ross Systems	11.25	-0.50	-4.26
OTC	27.25	14.75	SEI Corp.	25.50	-0.25	-0.97
OTC	22.88	13.75	Shared Medical Systems	20.75	-1.50	-6.74
OTC	35.25	12.00	Software Publishing Corp.	18.63	-0.38	-1.97
NYS	15.75	5.50	Sterling Software	15.50	-0.25	-1.59
OTC	19.75	9.50	Sungard Data Sys.	15.00	-0.38	-2.44
OTC	59.75	17.75	Symantec Corp.	59.25	-0.50	-0.84
NYS	10.63	4.50	System Center Inc.	8.25	0.25	3.13
OTC	37.25	12.50	System Software Assoc.	19.00	-0.25	-1.30
Semiconductors					**Off 3.21%**	
NYS	14.25	3.63	Advanced Micro Devices	11.88	-0.50	-4.04
NYS	12.50	5.50	Analog Devices Inc.	7.63	-0.13	-1.61
NYS	13.50	5.25	Chips & Technologies	8.63	-0.25	-2.82
OTC	59.25	26.00	Intel Corp.	47.50	-2.00	-4.04
NYS	12.50	5.13	LSI Logic Corp.	7.75	0.63	8.77
NYS	19.13	6.75	Micron Technology	13.50	-0.63	-4.42
NYS	71.25	45.75	Motorola Inc.	66.00	-2.13	-3.12
NYS	8.38	3.00	National Semiconductor	4.88	-0.13	-2.50
NYS	47.63	22.50	Texas Instruments	30.00	-1.63	-5.14
OTC	12.25	3.00	VLSI Technology	7.88	0.25	3.28
OTC	16.75	4.75	Weitek	8.00	-1.50	-15.79
ASE	9.63	3.13	Western Digital Corp.	3.25	-0.25	-7.14
Peripherals & Subsystems					**Off 3.58%**	
OTC	2.75	0.88	Apertus Technologies	1.25	-0.25	-16.67
OTC	16.75	7.50	Banctec Inc.	14.00	1.75	14.29
OTC	21.75	4.25	Cambex Corp.	19.75	-1.00	-5.95
ASE	11.75	4.25	Cognitronics Corp.	8.13	-0.13	-1.52
NYS	31.25	14.63	Conner Peripherals	21.63	-0.88	-3.89
ASE	14.50	7.00	Dataram Corp.	13.25	-0.13	-0.93
NYS	13.00	4.88	EMC Corp.	7.38	-0.13	-1.67
NYS	47.25	33.75	Eastman Kodak Co.	42.63	-0.50	-1.16
OTC	11.25	4.75	Emulex Corp.	8.25	-0.63	-7.04
OTC	25.50	14.00	Evans & Sutherland	17.25	-0.50	-2.82
OTC	6.50	3.88	Iomega Corp.	4.88	-0.13	-2.50
OTC	28.25	8.00	IPL Systems Inc.	22.75	-0.50	-2.15
OTC	7.88	1.63	Maxtor Corp.	3.88	0.13	3.33
OTC	18.00	4.63	Micropolis Corp.	7.50	-0.50	-6.25
NYS	97.50	73.63	3M Corp.	86.38	-0.50	-0.58
OTC	10.75	6.00	Printronix Inc.	6.88	0.13	1.85
NYS	24.75	8.50	QMS Inc.	21.88	-1.38	-5.91
OTC	18.25	8.25	Quantum Corp.	11.25	-0.25	-2.17
NYS	7.63	4.38	Recognition Equipment	6.50	-0.25	-3.70
OTC	11.50	4.00	Rexon Inc.	8.38	-0.38	-4.29
OTC	19.88	5.63	Seagate Technology	9.00	-1.13	-11.11
NYS	51.50	11.00	Storage Technology	42.75	-4.50	-9.52
OTC	4.75	1.25	Tandon Corp.	2.00	-0.50	-20.00
NYS	30.88	13.50	Tektronix Inc.	29.38	-0.50	-1.67
OTC	0.53	0.16	Televideo Systems	0.38	0.00	0.00
NYS	60.13	29.00	Xerox Corp.	58.00	-0.63	-1.07
Leasing Companies					**Up 0.67%**	
OTC	16.25	7.00	Amplicon Inc.	15.00	0.25	1.69
NYS	28.38	14.63	Comdisco Inc.	19.63	-0.63	-3.09
OTC	14.63	8.88	LDI Corporation	12.75	0.50	4.08
OTC	4.50	2.25	Selectern Inc.	3.25	0.00	0.00

NOTE: NOVELL COMPLETED A 2-FOR-1 STOCK SPLIT.

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DEC calls more hosts to CIT

BY JOANIE M. WEXLER
CW STAFF

MAYNARD, Mass. — Digital Equipment Corp. will announce tomorrow a next-generation version of its Computer-Integrated Telephony (CIT) product. Dubbed Callcenterplus, the CIT-compatible follow-on will integrate additional host platforms and voice applications into a "super call center," a DEC spokesman said last week.

CIT allows companies to combine information residing on a computer database with voice telephone calls to beef up user productivity.

DEC's Callcenterplus will integrate "more hosts and a whole group of third-party voice applications, such as facsimile," the spokesman said. DEC's CIT already supports DEC VAX/VMS computers. The spokesman added that the new Callcenterplus will also support reduced instruction set computing-based Ultrix and VMS systems.

Fax focus

One CIT user said he would "like to integrate fax with our Microvax so I could electronically distribute media releases to our season ticket holders." Roger Long, systems manager at the Denver Nuggets basketball team, said he invested half a million dollars in DEC's CIT last April to provide sales and marketing representatives with a daily on-screen file of sales prospects. The user touches a key, and the application automatically dials the stored phone number.

Depending on how comprehensive the integration is and whether other vendors' host platforms are included, DEC could leapfrog IBM in this area.

"My understanding is that DEC is going a step beyond what IBM has done with Directtalk," said Tom Nolle, president of Cimi Corp., a consultancy in Voorhees, N.J. Directtalk is one of IBM's CIT products.

Announced in July, Directtalk runs on a Personal System/2 or RISC System/6000. It integrates telephony applications from IBM's Rolm Systems telephone switches with databases on any IBM platform.

Client/server

FROM PAGE 1

remotely, said Frank Michnoff, an analyst at Meta Group, Inc. in Westport, Conn.

"When we get asked to have a person 500 miles away hook into a system, it's a problem. There is no client/server dial-in," said J. Michael Barefield, manager of data administration and end-user computing at McDermott, Inc.

TTX's Anderson: *evaluating client/server tools*

Given how much vendors have been talking about client/server architectures, the tools should be there, analysts and users agreed. But they are not, so migration is glacial.

"I think people are making a big mistake if they think [they can] move mission-critical applications over to this kind of environment now," said a director responsible for applications development at a large Midwestern insurance association.

Carol J. Anderson, vice president of information technology at TTX Co., an IBM 3090 shop in Chicago, said, "These tools are late in coming to market." She added that the lack of tools such as autobackup and autorecovery in current client/server configurations concerns her.

Barefield said he is waiting for integrated data dictionaries and development tools. Users pinpointed the database area as particularly lacking.

Hilly Fuchs, assistant vice president of information systems at Continental Grain Co. in New York, said the company is "putting some client/server up to see how it works." He said the experiment will gauge the client/server platform in terms of performance, reliability and disaster recovery. Continental has 400 personal computers connected to an IBM mainframe via 3270 gateways.

Even where tools do exist, users often find they must struggle with complexity and integration issues, as well as learn a whole new language, Michnoff said.

Fuchs said Continental is looking at Microsoft Corp.'s SQL Server as a back end but lacks the tools needed to interface with the back-end box.

Len Miller, a vice president at Metropolitan Life Insurance Co. in New York, has already taken the client/server plunge and has proclaimed it "doable."

Met Life has rewritten applications from an extensive Bull HN Information Systems, Inc. minicomputer environment onto DOS-based PC LANS and servers to run at 1,000 sales office locations throughout the U.S. Initially, he admitted, it is a gamble "because there is so much opportunity for architectural change."

Steve Spanier, a consultant at Netrends in Sunnyvale, Calif., agreed that some users are implementing downsizing projects, but he added, "It's messy — it's not perfect."

What is needed, he said, is collaboration among mainframe and microcomputer vendors — for example, IBM and Novell, Inc.

"You can do almost anything. It's a matter of how much you want to create yourself," Michnoff said.

The outlook

Client/server tool technology is expected to go through three generations during the next five years, according to one consulting group

Client/server tools time line

Source: Forrester Research, Inc.

CW Chart: Janell Genovese

This is it

"Client/server" is one of those amorphous terms that few people can agree on. One definition comes from Tim Bajarin, a consultant at Creative Research Strategies International. He says there are two approaches:

The first involves downsizing. The application is moved to the desktop, the LAN provides lower-cost links to the host (which becomes an "overblown hard drive"), and central control goes to the client/server. The second is PC-driven, which involves a stand-alone client/server network.

NEWS SHORTS

Microsoft lifts curtain on Excel 4.0

Microsoft Corp. officials recently offered a peek at some of the upcoming features of the Windows-based Excel 4.0. Among the add-ons in the Excel 4.0 prototype is a customizable tool bar, a function similar to the smart icons feature in Lotus Development Corp.'s 1-2-3 for Windows. Also included is a development language for applications development.

Cisco grabs Oracle executive

Router maker Cisco Systems, Inc. has appointed Oracle Systems Corp. alumnus Douglas C. Allred as vice president of customer advocacy. Cisco said Allred is responsible for its customer engineering, customer service, marketing and information systems functions. He replaces Cisco co-founder Sandy Lerner, who left the firm in November 1990.

3Com ships 3 millionth adapter

3Com Corp. celebrated shipment of its 3 millionth Ethernet card by announcing plans to design and build adapter-board chips that combine software within the silicon. The chips will be used in 16- and 32-bit Ethernet cards for Industry Standard Architecture, Extended Industry Standard Architecture and Micro Channel Architecture buses for coaxial and twisted-pair wiring. The initial chips should ship in the first half of 1992.

BT, DEC link network management

British Telecommunications PLC and Digital Equipment Corp. launched a joint development program to link their respective network management systems, Concert Integrated Management System and Decmcc. Peer-to-peer interaction will be facilitated through Open Systems Interconnect Network Management Forum protocols. This in turn will provide integrated management of the range of networking devices and services supported by each. Interoperability between the two systems could be demonstrated at Telecom '91 in Geneva next month.

Justice Dept. and Unisys settle

The U.S. Department of Justice and Unisys Corp. agreed to settle criminal and civil charges of the Ill Wind investigation and three other cases in New York, New Mexico and Texas. The settlement total will not exceed $190 million, Unisys said. The cash impact in 1991 could be less than $10 million. Unisys Chairman and Chief Executive Officer James A. Unruh predicted that the financial impact on operations will be "minimal."

IBM licenses XGA

IBM will license its Extended Graphics Array (XGA) chip set to Inmos, an SGS-Thomson's Microelectronics Group subsidiary. This is said to be the first in a series of moves to proliferate the XGA standard. Inmos expects to begin shipping XGA chip sets in the first half of 1992. IBM gets particular Inmos device driver codes and soon plans to ship an XGA chip evaluation unit of the XGA chip for the Industry Standard Architecture bus.

Aldus offers trade-in deal

Aldus Corp. announced an aggressive tradeup program for its Persuasion 2.0 for Windows. Running through February, the offer allows users of most DOS- and Windows-based presentation graphics packages — such as Harvard Graphics and Powerpoint — to upgrade to Persuasion, including Adobe Systems, Inc.'s Type Manager, for $99.

Lotus pioneers gay benefits

Lotus Development Corp. has become first public company to extend spousal benefits to gay and lesbian couples. Lotus policy prohibits discrimination on the basis of sexual preference. "Spousal equivalents" of gay and lesbian employees and their qualified dependents will be eligible to receive medical, dental, vision and hearing coverage. Other policies effected are relocation, bereavement leave and expatriate assignments.

Intel to extend its reach into network management

BY JIM NASH
CW STAFF

SANTA CLARA, Calif. — Intel Corp. is expected this week to dive into the network management arena. According to documents obtained by *Computerworld*, the chip monolith plans to announce three new management tools and an upgrade for a fourth product.

Slated for fall delivery are Netsight Sentry, Netsight Analyst and Netsight Professional. Intel is expected to update Lansight, a network management utility for Novell, Inc. systems that was picked up in May along with the assets of Lansystems, Inc.

Intel originally planned to release its new management line on Sept. 4 but postponed the unveiling. A news conference with Intel President and Chief Executive Officer Andy Grove is now scheduled for Wednesday to introduce the products.

Intel officials declined to comment on the introductions.

Sentry is a firmware network monitor designed to gather statistics for Token Ring and Ethernet networks. The product is software combined with a personal computer add-in board. It is priced at $1,995 for Ethernet and $2,995 for Token Ring.

Analyst ($995) is a software-only protocol analyzer on a floppy disk that runs on any PC above an Intel 80286. It analyzes Transmission Control Protocol/Internet Protocol (TCP/IP), Internet Packet Exchange (IPX) and Apple Computer, Inc. Appletalk packets on Ethernet systems only.

Professional combines real-time monitoring and protocol analysis of Ethernet and Token Ring nets. It analyzes TCP/IP, Appletalk, IPX, Banyan Systems, Inc. Virtual Networking Software, Xerox Network Systems, Digital Equipment Corp.'s Decnet and Open Systems Interconnect protocols.

The Token Ring version is priced at $8,995. Ethernet versions will cost $7,995.

Lansight, renamed Lansight Support, is a revised utility that gathers real-time configuration information from Novell workstations and file servers from remote consoles. The update, according to the release, cuts by 80% the network traffic created when Lansight is used. It will cost $395, the release said. Updates for users of Lansight Version 2.0 will cost $195.

Will DR DOS entice users?

BY CHRISTOPHER LINDQUIST
CW STAFF

MONTEREY, Calif. — Beta-test users of Digital Research, Inc.'s just-released DR DOS 6.0 said the product is superior in many respects to Microsoft Corp.'s MS-DOS 5.0, but some doubt whether those benefits offer sufficient incentive for users to switch.

Some users and analysts indicated that the functionality gap between DR DOS and MS-DOS closed considerably with the release of MS-DOS 5.0. Microsoft's renewed commitment to evolving the operating system further may be enough to keep users from making the jump to the smaller vendor's product.

Digital Research's beta-test users said Version 6.0 of DR DOS continues to offer a variety of memory, disk and security features that are either more refined than Microsoft's product or not found in it.

Using its Memorymax software, DR DOS allows users to load the DOS kernel, disk buffers and BIOS into high memory. Device drivers and memory-resident programs can be loaded into upper memory. But while MS-DOS 5.0 can give users 613K bytes of free conventional memory, DR DOS 6.0 can provide up to 627K bytes, up from 620K bytes in DR DOS 5.0.

Also, unlike MS-DOS 5.0, DR DOS can free as much as 628K bytes on certain 80286-based machines and 612K bytes on some 8088-based machines.

It was the memory-freeing capabilities of DR DOS that caused many of its current users to switch from MS-DOS before the release of MS-DOS 5.0. "We were constantly running out of memory with MS-DOS," said Ronald Kosar, enterprise network manager at Martin Marietta Aero and Navy Systems.

Kosar added that the headaches of supporting several hundred users on a wide variety of MS-DOS versions reinforced his decision to switch.

Memory needs

Memory was one of the reasons Bjorn Billing, manager of technical support at Pan Am World Airways in Rockleigh, N.J., purchased DR DOS as well. "RAM cram is the name of the game these days," he said.

With the advent of MS-DOS 5.0 and its ability to use more memory, the reasons for buying DR DOS may no longer be so clear-cut, which may cause problems for Digital Research. "Microsoft really has eclipsed some of the sales features of DR DOS," said John Dunkle, president of Workgroup Technologies, Inc. in Hampton, N.H.

Beta-test user Claes Harde, a senior planner at a foreign car importer in Las Vegas, said a few kilobytes of extra memory may not be enough to sway a user anymore. He added that this version of DR DOS is more of an "evolution" than a "revolution" for the operating system."

Some of the extra functions supplied with DR DOS include the following:

- Viewmax, a DOS shell that allows users to utilize DOS without working from the command line.
- Taskmax, a task switcher that uses extended or expanded memory to improve performance over disk-based task switchers. It can be preconfigured to load as many as 20 applications at start-up.
- DOSbook, an on-line, hypertext DOS manual.
- Diskmax, a disk management utility that provides for data compression, reportedly increasing disk storage by up to 100%.

DR DOS 6.0 is currently available for a list price of $99. DR DOS users who purchased the package after Aug. 8 can upgrade for $9.95; otherwise, the upgrade costs $24.95.

Buyout

FROM PAGE 1

CA's approximately $283 million bid for Pansophic would make the mainframe systems software house CA's largest buy since the $333 million purchase of Cullinet Software, Inc. two years ago.

Meanwhile, Pansophic customers interviewed last week, though noticeably uneasy, adopted a wait-and-see attitude pending further details of yet another string of complex acquisitions by CA.

Dominique Laborde, CA's research and development vice president, said the pending acquisitions "play into CASE announcements coming [from CA] next month."

IBM a factor

In addition, according to Laborde, "On-Line was dealing with IBM" on IBM's Information Warehouse, a strategy to provide users with easier access to corporate data.

CA, he said, "will be working with [On-Line's data access] technology," possibly by reviving On-Line's project to develop the second generation of Ramis, a fourth-generation language that operates with multiple databases.

"This could happen," said Ed Acly, a software analyst at International Data Corp. in Framingham, Mass.

He also said Pansophic's Panvalet library control tool gives CA a huge presence in the library control market — a posture "that could be very significant if [IBM's] AD/Cycle ever catches on." Pansophic's Telon adds a Cobol generator to CA's portfolio.

However, Acly said, "I see no master plan here. I think CA is just looking at Pansophic, On-Line and their [respective] products as darned good investments. They're going to milk the revenue streams."

That is untrue, Kumar said. "People who say we're [acquiring firms] only to milk the base don't understand us or the business," he said.

Stuart Woodring, a software analyst at Cambridge, Mass.-based Forrester Research, Inc., agreed.

"I've looked for CA '90s," Woodring said, referring to CA's strategy for tying together its product lines and extending its offerings across a broader range of platforms. "But if it's there, I don't see it. It's 'ponies in the waves' — sounds wonderful but doesn't mean anything," he added.

Andrew Galat, president of Pansophic's Telon User Group, was among the unsettled observers. "There is immense confusion and concern over continued support for Telon's mainframe product line and how the transition will be made to a workstation product." Pansophic has been in the process of porting Telon to workstation platforms.

Lou Paragallo, manager of operations systems at Addison-Wesley Publishing Co. in Indianapolis and a user of Pansophic's Warehouse Boss management software since April, voiced hopes that CA will commit to continued development of this "very young but tremendously promising" product.

Paragallo said he was concerned by CA's tendency in the past to shelve some product lines of acquired companies (see story at right).

Neglected user

At Provident Life & Accident Insurance Co. in Chattanooga, Tenn., computer operations director Gary Ainscough reported mixed reactions to the Pansophic announcement.

A longtime Telon and Panvalet user, Provident watched its database supplier — Cullinet, maker of IDMS/R — disappear into CA two years ago. "Then, we were concerned that [CA] wouldn't support us — and they have given us support," Ainscough said.

This time around, Ainscough said, Provident is less fearful but also less hopeful.

"We've found that if CA picks a product line and says they'll support it, they will — but you won't necessarily see any forward motion," Ainscough said.

Also missing, he noted, is depth of support: Too often, "We're not hearing a lot of experience on the other end of the line. We know they've got a wealth of resources, and we can envision their using some of them to make improvements in Panvalet that maybe Pansophic hadn't stepped up to."

Senior correspondent Johanna Ambrosio contributed to this story.

A bump in the road

At Melville, N.Y.-based National Westminster Bank, Tandem Computers, Inc. systems support manager Terry Stein is finding a CA acquisition grim news despite CA's good intentions.

Earlier this year, Stein said, CA bought Cincinnati-based Panoramic, Inc., maker of On Guard, a Tandem-based security software package. On the eve of going live with On Guard, the bank found bugs throughout the product.

Cash-strapped Panoramic could offer scant aid, Stein said. Well-heeled CA looked like a savior.

But weeks of negotiations with CA officials have ended in frustration. "We've gotten attention, but we haven't seen any real action," Stein said. Early reports from CA indicated that it could be months before the bank gets help, she added.

Stein said she does not fault CA. "This is their breakthrough on the Tandem platform," she noted, "so it was a good long-term buy for them. But it's a product whose time hasn't come yet. In a couple of years, it probably will."

That is cold comfort to National Westminster, which expected a nifty answer to its auditors' demands for security and now finds itself an accidental CA beta-test site.

"This isn't what we spent [untold sums and] nine months of resources to be," Stein said.

NELL MARGOLIS

Remedy eases inter-LAN woes

BY ELISABETH HORWITT
CW STAFF

BOSTON — A bevy of leading local-area network and interconnection vendors and users gathered here last week to hail what they claimed was a watershed event: the introduction of a LAN help desk and trouble-ticketing system by a start-up called Remedy Corp.

Trouble tickets are entered into a network management system when a problem is identified to keep track of who is doing what to resolve the problem.

While the application is unlikely to revolutionize network management, it could usher in the next generation of products capable of managing users' exploding installations of interconnected multivendor LANs, according to James Herman, a principal at Northeast Consulting Resources, Inc.

The past couple of years have seen a spate of Simple Network Management Protocol-based products that can receive and process alarms from multivendor networking devices, Herman said. Still missing, however, are platform-independent applications that integrate trouble-ticketing, configuration, problem management and other key functions across a broad mix of network devices.

"We need multivendor platforms to help us manage our growing multivendor networks, and right now, each system has its own unique applications," said Brenda Lilard, senior help desk analyst at LSI Logic Corp. LSI is "watching Remedy with great anticipation."

Dubbed Action Request System (ARS), the product is said to provide trouble-ticketing and work-order systems to manage LAN help-desk operations. It currently runs on Hewlett-Packard Co.'s Openview and Sun Microsystems, Inc.'s Sunnet Manager on a Sun Sparcstation. Other applications and broader systems support are in the works, Remedy said. Sun's remote procedure call technology is said to allow users to interactively access the work-order database or find out how similar jobs were handled in the past.

DHL Worldwide Express plans to purchase ARS in the near future as long as Remedy fulfills its promise to provide an Open Software Foundation implementation of the product, said John Payne, a communications architect at DHL. "DHL has many autonomous user groups that choose their own technology," he said. Remedy will help DHL in its goal of reducing the cost of serving such users' multivendor networking needs, he added.

ARS can act as a stand-alone trouble-ticketing system or initiate tickets on the basis of incoming alerts and alarms from another vendor's management platform, Remedy said.

While Remedy announced no formal business relationships, the following vendors showed up at the conference to express their support of its strategy: LAN vendors 3Com Corp., Chipcom Corp. and Synoptics Communications, Inc.; router vendors Vitalink Communications Corp. and Wellfleet Communications, Inc.; and Sun's network management platform subsidiary, Sunconnect Systems.

Several vendor representatives indicated that porting ARS to their network management platforms would be easy because they share the same basic platforms: Unix-based Sparcstations running either Sunnet Manager or Openview.

Indeed, the internetwork management industry's recent coalescence around these platforms, coupled with vendors' willingness to provide open application programming interfaces, has paved the way for Remedy and other independent software vendors to provide multivendor applications, according to sources.

The first ARS shipments are due by the end of this year.

Coming of age

Integrated internetwork management has undergone sweeping changes in five years

1986
IBM's Netview raises awareness of integrated management issue

1988
Other network management platforms begin to emerge, such as Hewlett-Packard's Openview and AT&T's Accumaster Integrator

1989
Rise of SNMP as a management protocol for LAN and router markets

1990
Market saturated with SNMP workstations; users wary

1991
First multiplatform LAN management applications appear from Remedy

Source: Northeast Consulting Resources, Inc.

FDA lemon

FROM PAGE 1

advisory committee headed by former FDA chief Charles Edwards came to the same conclusions in May.

Because a massive funding boost is unlikely, the independent Edwards committee said, the FDA needs to set priorities, streamline operations and improve management.

However, the panel complained that the FDA's information systems could not produce data on agencywide performance, work load activity trends or resource allocation. The agency is divided into parochial centers, each one specializing in an area such as drug evaluation, food safety or medical devices.

The Edwards committee recommended that the FDA give high priority to creating a "unified information system" that links all field operations, centers and the commissioner's office in order to provide timely information about surveillance, inspections, laboratory analysis and compliance activities.

Not out of date

Current and former IS professionals at the FDA told *Computerworld* that the agency's information systems are not really outdated, but they acknowledged that the systems are fragmented because each center has developed its systems independently.

There is virtually no data sharing, agencywide IS architecture or executive information system, the Edwards committee reported.

According to Thomas E. Reddin, director of information resources management at the FDA, the problem is that the FDA dismantled its centralized IS organization about 20 years ago, allowing each center to grow its own applications on minicomputers.

FDA Commissioner David A. Kessler, appointed last fall to revitalize the Rockville, Md.-based agency, has begun to implement a turnaround strategy that includes a reorganization and a heavy dose of upgraded and integrated IS.

The reorganization will feature the appointment of a deputy commissioner for management and systems in charge of IS and strategic planning who will report to Kessler. The position is expected to go to Mary Jo Veverka, formerly with the management consulting firm Booz Allen & Hamilton, Inc. in New York.

It was Veverka who studied the FDA's IS for the Edwards committee and recommended a more integrated system. She is now a senior adviser to Kessler and is expected to become the deputy commissioner this fall, said Jeffrey Yorke, editor of the "Washington Drug Letter," a newsletter in Arlington, Va.

For the first time, the FDA is beginning to identify areas in which data and applications software could be shared across the boundaries of the centers, Reddin said.

FDA managers previously assumed that each center's IS needs were unique, but Veverka has pointed out that many FDA offices perform similar functions that could be handled by agencywide systems, such as the registration of products and firms, electronic mail for correspondence with industry and the electronic submission and review of new product applications.

One high priority for the new FDA team is to accelerate and standardize the electronic submission of new drug applications in order to speed up the review and approval process for new drugs. Kessler has set an ambitious goal of automating all drug applications by 1995.

Stop those trucks!

The FDA hopes to put an end to the current situation in which drug companies unload a truckful of paper documents at the agency's shipping dock.

The FDA and the drug industry have been experimenting with "computer-assisted new drug applications," whereby the company lends the FDA a computer loaded with the data, but there is no standard procedure or format for computerized submissions.

Kessler said he also wants to continue upgrading and integrating the hodgepodge of systems used by field offices and improve the automated tools available to regulate imports, an area in which the agency has been criticized for lax enforcement.

During the next 12 months, Reddin said, the FDA will be installing an on-line system that will give the FDA's food inspectors — working at the nation's harbors and air terminals to keep out unhealthy imported food — the information they need to be more productive.

Years of budget cuts take their toll

How did the FDA come to be regarded as a classic case of "hollow government?" It all began when the agency's budget was cut 10 years ago at the start of the Reagan administration. The budget stayed relatively flat throughout the 1980s even as Congress was piling on new responsibilities and the acquired immune deficiency syndrome crisis developed, according to the Edwards committee.

For example, from 1980 to 1988, Congress enacted 20 laws imposing new responsibilities on the FDA, while the FDA's work force declined by more than 10%. The FDA estimated it will have to triple its budget by 1997 to do its job.

Today, the FDA is a $690 million agency that regulates 25% of the U.S. consumer marketplace, from hearing aids to shampoo and soup to nuts. It also oversees blood banks and vaccines, microwave ovens, X-ray machines, animal feed, medicines, prescription and over-the-counter drugs, pacemakers and other medical devices.

The FDA's $50 million budget for IS is about 7% of the total budget, a percentage that is on the high end for government agencies. However, neither the IS slice nor the whole budget pie is big enough to handle the FDA's wide-ranging duties, the Edwards committee said.

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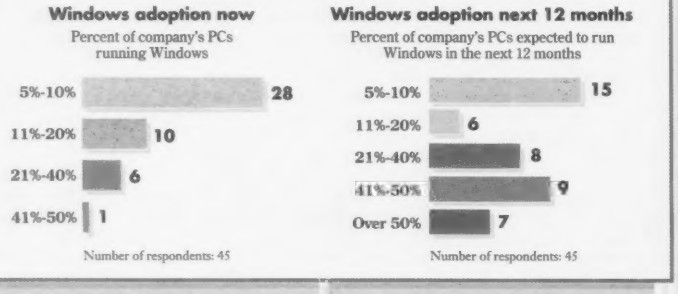
TRENDS

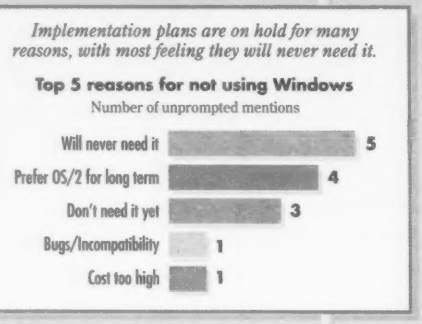
Barred Windows?

A recent study shows that, for the moment, companies are less willing to move to Microsoft Corp.'s Windows.

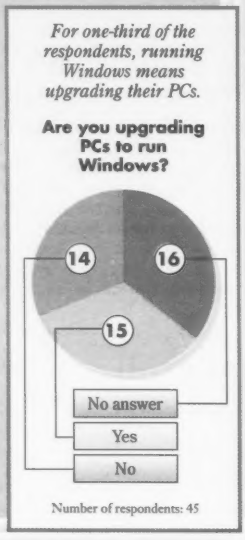
In some cases, increased use is expected, but only 17% of the respondents feel that half their systems will be running Windows in the next 12 months.

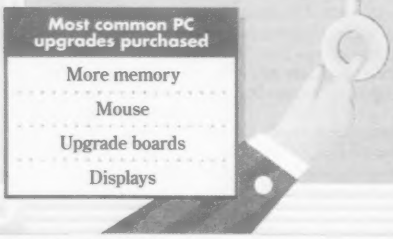


Implementation plans are on hold for many reasons, with most feeling they will never need it.



For one-third of the respondents, running Windows means upgrading their PCs.





Source: Sierra Alliance, Scottsdale, Ariz.

CW Chart: Marie Haines

NEXT WEEK

There needs to be a cultural shift in the IS organization to take advantage of **computer-aided software engineering**. IS managers must orient their development staffs to a more "scientific" bent, emphasizing analysis to uncover the rules of the business. Designers can then use these rules to build appropriate systems. See next week's In Depth.

Manuel King

In the age of the high-speed modem: Technology Analysis rounds out its coverage of communications software with a look at two packages for Microsoft Corp.'s Windows environment. Softklone Distributing Corp.'s Mirror III earns middlin' reviews, while Datastorm Technologies, Inc.'s Procomm Plus actually makes data transfers seem "fun."

INSIDE LINES

A table near the door

▶ Up to 80% of Security Pacific's Southern California-based employees may be without jobs after the Security Pacific/Bank of America merger is finalized, one source close to Security Pacific predicted. Meanwhile, the office of Security Pacific IS boss John Singleton — along with those of some other top executives — has been moved from the 54th floor of Security Pacific headquarters down to the same level as the executive dining room. Singleton, reportedly the odd man out with Bank of America's Marty Stein, who is set to head the combined IS operations, is said to be "weighing his options."

DEC's fall colors

▶ Sources say DEC will roll out an October surprise — namely, an early release of the VAX 6000 Model 600 line, which is said to deliver twice the price/performance of the current midrange models. The Model 600s will be stocked with N-VAX chips, fourth-generation C-VAX chips that can run the equivalent of 17 MIPS to 30 MIPS. Also expected soon is the debut of the RDB relational database management system for DEC's Unix-based Ultrix line of Decstations and Decsystems.

Doing the right thing

▶ Lotus refused to confirm or deny speculation that a recent shuffle in its international management ranks resulted from the discovery of Lotus sales to South Africa. Since 1985, Lotus has had a policy of not selling products or services to South Africa as long as apartheid exists there. However, a well-placed UK-based source confirmed a report of a blowup between Robert Schechter and James Meehan, both at Lotus International Business Group, after Schechter reportedly found evidence of sales to South Africa along with efforts to cover up that fact. Meanwhile, Meehan, based in the UK, has resigned to "pursue other interests."

Nose job

▶ Network General is planning to announce basic revisions to its network analyzer, Sniffer. A source close to the company said the core software has been rewritten to include very sexy expert systems technology. Sniffer will be able to remember things about the network as well as forget them. That is, it will be intelligent enough to differentiate between significant information and unimportant, more continual background data. The announcement is scheduled for sometime later this month.

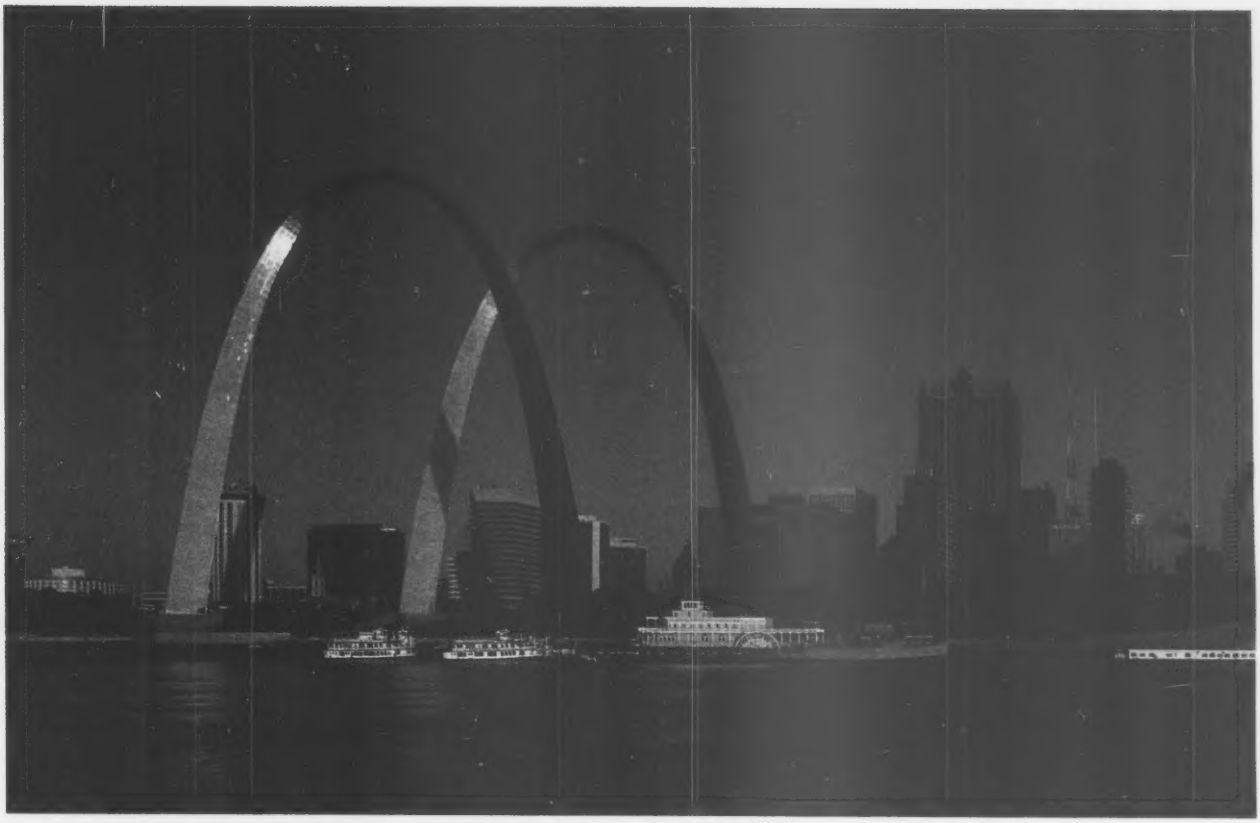
Fathers always last to know

▶ Nobody was more surprised than Conner Peripherals when Micro Connections, a little-known PC manufacturer based in Plainview, N.Y., announced a 6½-pound notebook using a 100M-byte, 2½-in. drive supplied by Conner and scheduled to ship sometime late in the fourth quarter. A Conner spokesman said his company has yet to announce that it's building 100M-byte drives in the 2½-in. form factor, let alone shipping them.

Primed and waiting

▶ Rumors of suitors for Prime Computer continue to swirl in Natick, Mass. But Sales Vice President Dave Fernauld has scotched all of them, including the latest, which had Hewlett-Packard looking at Prime's books. Fernauld did say that early in 1992, Prime will launch a new series of multiprocessing-oriented hardware and software products for 50 series customers. The new items should be available early next year.

Seems a guy in California got caught speeding by a new automated system that takes a picture of the speeder's license plate. The department of motor vehicles then spit out and dispatched a $40 ticket to the scofflaw, along with a picture of his plate. Mr. Wiseguy sends back a picture of a $40 check. The department in return sends him a picture of a pair of handcuffs. He paid. Don't let good news languish in the slow lane. Give a call to Assistant News Editor Jim Connolly at (800) 343-6474, or send a fax to (508) 875-8931, or Compuserv him at 76537,2413.



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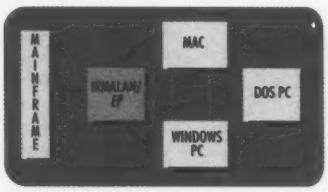

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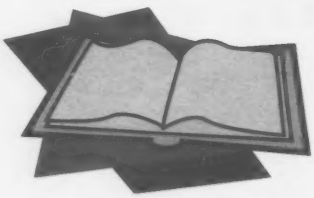
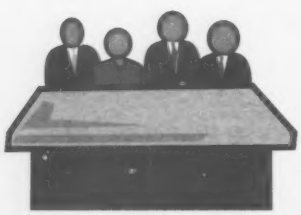
UNIX DATABASE

Which UNIX® RDBMS did Hewlett-Packard®, IBM®, Unisys®, Data General®, AT&T®, Sun®, and Sequent® choose to demonstrate the power of their latest UNIX Systems?

Informix.



IDC Study on UNIX OLTP
UNIX On-Line Transaction Processing at Multi-User UNIX Sites (January 1991) states that some 47.4% of sites running commercial applications on multi-user UNIX systems are running OLTP. The study reports that Informix is in use at more sites than any other DBMS for UNIX OLTP applications.



About the TPC
The Transaction Processing Performance Council (TPC) was founded in 1988 to define transaction processing benchmarks and to provide performance data to the industry. Today, 40 hardware and software vendors, including AT&T, Bull, Sybase, Data General, DEC, ASK/Ingres, Fujitsu, IBM, Informix, Hewlett-Packard, NCR, Olivetti, Oracle, Pyramid, Sequent, Siemens, Sun, and Unisys are members.

Within the past five months, *every one* of these companies selected and used the INFORMIX-OnLine database server to demonstrate to their customers the power of their latest UNIX systems. No other UNIX database product has been this extensively benchmarked—because nothing shows performance like OnLine.

New TPC Benchmarks Used

In each case, the Transaction Processing Performance Council's rigorous TPC A and TPC B benchmarks—the new standard for comparing system and database performance—were used to highlight OLTP performance and database throughput.

The Number 1 Choice for UNIX OLTP

Informix is the number one UNIX OLTP choice. A January 1991 International Data Corporation (IDC) study shows that when it comes to UNIX OLTP applications, Informix products are installed at *more than twice as many multi-user UNIX sites* as our closest competitor. It's independent confirmation that thousands of companies worldwide rely on Informix-based OLTP solutions every day.

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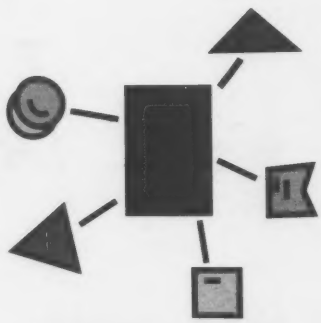

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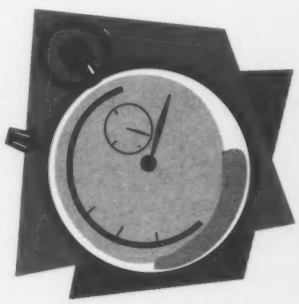

TP1 vs. TPC Benchmarks
The TP1 benchmark is no longer the accepted benchmark for measuring database performance. The new TPC tests establish more complete, thorough specifications than TP1, leading to more objective, verifiable results for comparing performance between hardware systems and software products. TPC Benchmark™ A measures OLTP processing performance. TPC Benchmark™ B—similiar to a batch test—focuses on database throughput.

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